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## **Developing an employee selection process for small and medium-sized enterprises**

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## Abstract

The costs of unsuccessful hiring decisions might be unbearable for small and medium-sized enterprises (SMEs). At the same time, many Finnish SMEs are struggling with employee selection. The SMEs mostly rely on interviews, and they do not usually use any tests or outside help. Digitalization is also making its way to recruitment and employee selection, but for the SMEs the question remains: what tools and methods should be used in employee selection? There is a lot of previous research studying different employee selection methods, but basically no research that would combine the methods and suggest an employee selection process specifically for SMEs.

This thesis studied how SMEs should develop their employee selection process. The study applied a qualitative research approach, and data were collected with theme interviews. The interviewees were employee selection specialists from three top-class SMEs, a human resources manager from a global top tier management consulting company, two psychologists working with employee selection and headhunting, a professor of psychology, and a recruitment and employee selection specialist who has acted as an adjunct professor. The data were analyzed with an abductive perspective utilizing a thematic analysis method. Generalized statements, direct quotes, tables and figures were used to introduce and review the results.

The main findings of the study suggest that SMEs should use objective and structured selection methods such as structured online application forms, structured interviews, work sample tests, cognitive ability tests and structured reference checks. Furthermore, the assessment should be objective and utilize a screen out approach, where applicants are compared to predetermined cutoff scores. In SMEs the subjective feeling of whether the assessor wants to work with the applicant or not is a necessary, but not a sufficient condition. The subjective feeling should not affect the objective assessment of the applicant's skills and abilities. Lastly, the job analysis phase is highly crucial in SMEs, and general mental ability (GMA) and previous work experience are often important selection criteria.

Entrepreneurs, CEOs, recruiters and other people working with employee selection in SMEs can use the findings of this study to improve their own employee selection processes. In order to help the SMEs to apply the results in practice, the study presents a framework and a set of important points that guide the development of the selection process.

**Keywords** employee selection process, assessment methods, selection methods, SME, selection, recruitment

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### Tiivistelmä

Epäonnistuneiden rekrytointien kustannukset voivat olla kestäättömän suuria pienille ja keskisuurille (pk) yrityksille. Samaan aikaan monilla suomalaisilla pk-yrityksillä on haasteita henkilöstön valinnan kanssa. Pk-yritykset luottavat enimmäkseen haastatteluihin, ja testejä tai ulkopuolista apua ei yleensä käytetä. Myös digitalisaatio tekee tuloaan rekrytointiin ja valintaprosesseihin, mutta pk-yritysten kannalta tärkeä kysymys kuuluu, mitä työkaluja ja menetelmiä yritysten tulisi käyttää henkilöstövalinnoissa? Aikaisemmat tutkimukset käsittelevät laajalti erillisiä valintamenetelmiä, mutta käytännössä mitään sellaisia tutkimuksia ei löydy, jotka yhdistäisivät eri menetelmät ja suosittelisivat pk-yrityksille sopivaa valintaprosessia.

Tämä työ tutki, miten pk-yrityksen tulisi suunnitella henkilöstön valintaprosessi. Työssä käytettiin laadullista tutkimussuuntausta, ja materiaalit kerättiin teemahaastatteluilla. Haastateltavina oli asiantuntijoita kolmesta huippuluokan pk-yrityksestä, kansainvälisen huipputason liikkeenjohdon konsulttiyrityksen henkilöstöpäällikkö, kaksi henkilöstövalintojen ja suorahaun parissa työskentelevää psykologia, yksi psykologian professori ja yksi henkilöstövalintojen parissa työskentelevä asiantuntija, joka on toiminut ennen dosenttina. Aineisto analysoitiin abduktiivisella lähestymistavalla käyttäen hyödyksi teemoittelua. Yleistettyjä lausumia, suoria lainauksia, taulukoita ja kaavioita käytettiin tulosten esittämiseen ja tarkasteluun.

Työn tärkeimmät tulokset suosittelivat, että pk-yritysten tulisi käyttää objektiivisia ja strukturoituja valintamenetelmiä, kuten strukturoituja kyselylomakkeita, strukturoituja haastatteluja, työsimulaatioita, yleisälykkyiden testejä ja strukturoitua hakijoiden referenssien tarkistusta. Lisäksi osaamisen ja kykyjen arvioinnin tulisi olla objektiivista ja hyödyntää karsivaa menetelmää, jossa hakijoita verrataan tiettyyn ennalta määrättyyn tasoon. Subjektiiivinen tunne, haluaako arvioija työskennellä hakijan kanssa, on pk-yrityksissä välttämätön, mutta ei riittävä ehto. Tämä subjektiivinen näkemys ei saa vaikuttaa hakijan osaamisen objektiiviseen arviointiin. Lisäksi työssä havaittiin, että työanalyysi on erittäin tärkeä pk-yrityksissä, ja että yleisälykkyys (GMA) sekä aikaisempi työkokemus ovat usein tärkeitä valintakriteerejä.

Yrittäjät, toimitusjohtajat ja muut pk-yrityksissä henkilöstön valintaan osallistuvat henkilöt voivat hyödyntää työn tuloksia omien valintaprosessien parantamisessa. Jotta pk-yritykset pystyisivät soveltamaan työn tuloksia käytännössä, työ esittelee viitekehyksen ja listan tärkeitä asioita, jotka ohjaavat valintaprosessin kehitystä.

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**Avainsanat** henkilöstön valintaprosessi, valintamenetelmät, pk-yritys, henkilövalinta, henkilöarviointi, rekrytointi

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# Esipuhe

Dippadaijaa, se on valmis! Keväällä 2015, kun päätin diplomityön aloittamisen sijasta hakea mielenkiintoiseen Aalto Fellows –ohjelmaan, en tullut ajatelleeksi, että diplomityön tekeminen muiden töiden ohella voi olla haastava urakka. Ei käynyt silloin mielessä, että ennen diplomityön valmistumista päädyn erittäin mielenkiintoisiin tehtäviin Funzilife Oy:ssä ja muun muassa yhdeksi kevääksi Dubaihin. Kesällä 2016 erittäin epäonnisen, mutta toisaalta positiivisesti ajateltuna “onnekkaan” rintalihaksen irtoamisen ansiosta minulle jäi yhtäkkiä yksikätisenä ylimääräistä aikaa, jolloin diplomityö oli hyvä potkia käyntiin. Siitähän se sitten lähti - ja yli vuosi siinä kesti.

Polku Otaniemessä on ollut mielenkiintoinen ja oppeja täynnä. Tärkein oppi taisi kuitenkin jäädä viimeiseksi: diplomityötä, Funzin töitä ja perheyrietyksemme hallitustöitä tehdessä oppi, että kaikesta selviää, kunhan vain tarpeeksi panostaa, suunnittelee ajankäyttöä ja erityisesti muistaa nukkua ja palautua. Fuksivuonna en olisi tähän suoritukseen pystynyt.

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- Timolle loistavasta diplomityön sparrauksesta ja reflektointipeilinä toimimisesta.
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- Opiskelukavereille seitsemän vuoden matkasta. Te teitte tästä ikimuistaisen.
- Kaikille kavereille ymmärryksestä. Viimeisen vuoden aikana minua ei kovin paljoa näkynyt.
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## Abbreviations

AC:	assessment center
AHP:	analytical hierarchy process
ANP:	analytic network process
CV:	curriculum vitae
FFM:	Five-Factor Model
FTF:	face-to-face
GMA:	general mental ability
HR:	human resources
IQ:	intelligence quotient
KSAO:	knowledge, skills, abilities and other characteristics
MCDM:	multiple-criteria decision making
OWVI:	one-way video interview
PAQ:	position analysis questionnaire
PE fit:	person-environment fit
PO fit:	person-organization fit
RQ:	research question
SAW:	simple additive weighting method
SME:	small and medium-sized enterprise
STRC:	structured telephone reference checks
TOPSIS:	the technique for the order of prioritization by similarity to ideal solution
WPT:	Wonderlic personnel test

# 1. Introduction

This chapter starts by introducing the background and the motivation for the study. Afterwards, research objectives and questions are outlined, and the last section presents the focus and the delimitations of the study.

## 1.1. Background and motivation

Employees are often said to be the most valuable asset for any company. From this perspective, no wonder Kirsto Ovaska, the founder and the CEO of Smartly, one of the most outshining Finnish small and medium-sized enterprises (SMEs) at the moment, said that recruitment and employee selection are the most important and challenging tasks of an entrepreneur (Talvitie 2015).

At the same time many Finnish SMEs are struggling with recruitment and employee selection. Professor Riitta Viitala from University of Vaasa comments that Finnish SMEs need to develop their employee selection processes: *“Many (recruiters) terrifyingly rely that they will find the right applicant if they just interview. No outside help or tests are used”*. (Ojalehto 2017)

The problem that professor Viitala raises seems not to be relevant only in Finland. Highhouse (2008) argues that the modern decision aids, for example structured interviews and paper and pencil tests, are probably the most important achievements of industrial and organizational psychology. On the other hand, Highhouse (2008) continues that *“Arguably, the greatest failure of I–O psychology has been the inability to convince employers to use them.”*

There are a lot of evidence suggesting that employers do not believe that the research and modern decision aids are relevant for them in employee selection. Highhouse (2008) summarizes that unstructured interviews are often perceived as the most effective method in employee selection, even though the previous research unanimously points the exact opposite. Another study found out that regardless of the competence, managers valued competencies measured by unstructured interviews more than competencies measured by tests. As an example, when general mental ability (GMA) was assessed with paper-and-pencil tests and extraversion by unstructured interviews, managers placed more emphasis on extraversion. However, when extraversion was assessed with paper-and-pencil tests and GMA with unstructured interviews, managers valued GMA more. (Lievens et al. 2005)

Digitalization is also making its way to employee selection. For example, there is a growing trend of using structured online application forms instead of curricula vitae (CV) and handwritten application forms (Bartram 2000). According to CB Insights (2016), human resource (HR) tech startups received 2 billion dollars funding in 2015, boosting the creation of tools used in recruitment and employee selection. There are plenty of companies offering all kinds of recruitment and employee selection services ranging from video interviews to comprehen-

sive recruitment platforms, but for the SMEs the question remains: what methods should be used in employee selection?

Also huge companies like Google have been struggling with their employee selection processes. Years ago Google studied their own practices to determine who at Google were good at hiring. The tech giant analyzed tens of thousands of interviews and interview scores and compared them with the actual later job performance. Laszlo Bock, senior vice president of people operations at Google commented:

*“We found zero relationship. It’s a complete random mess, except for one guy who was highly predictive because he only interviewed people for a very specialized area, where he happened to be the world’s leading expert.” (Bock 2013)*

Compared to large corporations, SMEs often face another unique challenge: by default, the organizations are relatively small, and might not have specialized HR teams that handle recruitment and employee selection. In many cases it is the supervisor who takes care of the recruitment and employee selection alongside his or her actual work. The supervisors often have limited time and resources, and the need for new recruitments emerge suddenly, giving limited or no time for preparation.

From this background, taking into account digitalization, struggles of a tech giant, and the findings that HR professionals are reluctant to use the modern decision aids, it seems that there is a need to find out how SMEs should develop their employee selection processes. This thesis studies the selection process from the employer's point of view, focusing on how the SMEs should assess and hire the best applicants. There is a lot of previous research studying different assessment methods, but basically no research that would combine the methods and suggest an employee selection process specifically for SMEs. The findings of this study hopefully help SMEs in their pursuit of selecting the best talents to their teams.

## **1.2. Research questions and objectives**

The objective of this study is to develop an employee selection process framework for SMEs. This study aims to identify the best practices that selected top-class SMEs and employee selection specialists are using, and reflect the empirical findings on previous research. The research questions are presented below.

*RQ1: What kind of characteristics and methods describe the employee selection process of SMEs?*

*RQ2: How should SMEs decide the selection criteria for hiring?*

*RQ3: What kind of features do screen out and screen in stages have?*

*RQ4: Why should or should not pre-employment testing<sup>1</sup> be a part of the employee selection process in SMEs?*

*RQ5: How should SMEs manage decision-making in the employee selection process?*

Research question one focuses on finding evidence of what kind of characteristics and employee selection methods are currently relevant to companies. This question is not necessary limited to SMEs only, since larger organizations might be using methods that SMEs could also utilize. Secondly, one crucial part of the employee selection process is the criteria that the SMEs are measuring. Due to this, research question two focuses on the selection criteria, and tries to find out how SMEs should decide them. The third research question tries to reveal the features of screen in and screen out stages that many companies use. Screening out refers to practices that work by excluding unsuitable applicants, while screening in focuses on finding the best applicants (Mueller-Hanson et al. 2003).

The existing research suggests that different kind of pre-employment tests predict well future job performance. For example Schmidt and Hunter (1998) present that general mental ability and integrity tests have high predictive validity. However, it remains unclear how pre-employment tests work in SMEs, thus research question four tries to find the answer for this. Lastly, the whole employee selection process aims to provide valid information for the decision makers who either reject or hire the applicant, and the aim of research question five is to provide insight how decision-making should be managed in SMEs. Finally, the five above mentioned research questions all together try to answer to the main problem:

*“How should SMEs develop their employee selection process?”*

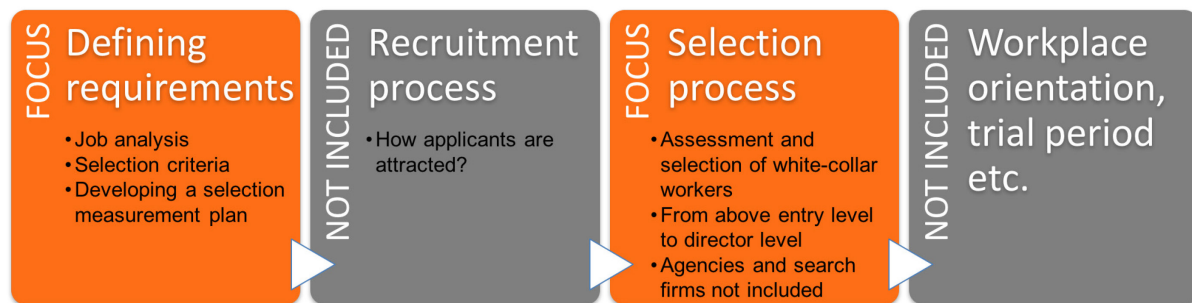
### **1.3. Focus and delimitations**

This thesis focuses on the employee selection process of small and medium size enterprises (SMEs). By definition, SMEs employ less than 250 employees (Tilastokeskus 2017b). However, the main focus of this study is not in micro enterprises employing fewer than 10 people (Tilastokeskus 2017a): the smallest enterprises that employ only one or a few people, which by definition are still included in SMEs, are delimited from this study.

This study answers the question how do SMEs assess and finally select the best possible job applicant out of the applicant pool that has been gathered. Recruitment activities, which means how the organization attracts the applicants, are not included in this thesis. Furthermore, any activities that take place after the selection process, for example workplace orientation, are not studied. Similarly, trial period has been left out, since it naturally follows the selection process and should be used in any case. Figure 1.1 clarifies the focus of this study.

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<sup>1</sup> Pre-employment testing refers to the testing of the applicant's job suitability that occurs during the employee selection process (Arthur 2005)



*Figure 1.1: Focus of the study*

The study concentrates on white-collar workers, who perform non-manual knowledge work typically in an office or other professional environment<sup>2</sup>. The workforce of the interviewed companies represented this type of white-collar workers. From an organizational level perspective this study covers mainly levels from above entry level to director level positions. Entry level positions will not be thoroughly discussed in this study since they do not usually require prior job knowledge in the same amount than more senior positions, and the lack of previous job experience causes special challenges to the employee selection process. Also, recruiting the highest level executives and board members is not considered in this thesis, since these recruitments usually have some special characteristics. In addition, internal recruitment, promotion, job expansion, job enrichment and job transfer are not included. Finally, since this thesis focuses on the activities that the SMEs can and should execute themselves, agencies and search firms are not covered.

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<sup>2</sup> <https://en.oxforddictionaries.com/definition/white-collar> and <http://www.dictionary.com/browse/white-collar>

## **2. Theoretical framework**

This chapter reviews the main research findings that are relevant for employee selection in SMEs. The chapter starts by introducing the employee selection process both as a generic process and from the perspective of SMEs. Afterwards, themes such as job analysis, selection criteria, pre-employment testing, selection methods, and assessment and decision-making are discussed.

### **2.1. The employee selection process**

Armstrong and Taylor (2014) define selection as “*the process concerned with deciding which applicants or candidates should be appointed to jobs*”. The aim of the selection process is to obtain quality employees that satisfy the human resource needs of the company with a minimum cost (Armstrong & Taylor 2014). Gamage (2014) adds that in addition to selecting the right person to the job and maintaining the selection process cost-effective, establishing and maintaining a good employer image is an important objective of the selection process. Selection can also be viewed as a rejection process, as it excludes applicants and selects only a few applicants that are offered a job (Gamage 2014).

Armstrong and Taylor (2014) divide the recruitment and employee selection process in ten stages, and the process is described in table 2.1.

Table 2.1: Stages of the recruitment and employee selection process. Adapted from Armstrong and Taylor (2014). Phase one has been supplemented by insight from Roe (2005) and Berry (2003).

Stage	Description
1 Defining requirements and developing a selection measurement plan <sup>3</sup> (Berry 2003, p.169)	<p>The stage includes role profiles and person specification. <i>Role profiles</i> define the overall purpose of the role, reporting relationships and the key result areas. <i>Person specification</i> include the knowledge, skills, abilities and other characteristics (KSAOs) required to carry out the role, and other characteristics such as qualifications, experience, behavioral competencies and specific demands.</p> <p>This stage is often conducted through a job analysis (Berry 2003, p.169) or a competence analysis (Roe 2005). Within this stage, also the plan how the KSAOs are measured in the employee selection process should be defined (Berry 2003, p.169).</p>
2 Attracting candidates	Part of recruitment and not discussed in this study. Includes developing employee value proposition and employer brand, and identifying potential sources of applicants.
3 Sifting applications	Sifting through CVs or applications forms by comparing the information available about the applicants with the key criteria in the <i>person specification</i> .
4 Interviewing	Obtaining information about applicants in order to be able to predict how well they will do the job. Structured interviews are recommended. Often conducted one-to-one with the applicant, but a second interviewer or a panel may be used in order to avoid a biased or superficial decision.
5 Testing	Testing levels of abilities, intelligence, personality characteristics, aptitudes and attainments with valid and reliable measuring instruments, which are often called psychological tests.
6 Assessing candidates	Assessing how the characteristics of the applicants match the person specification that were defined in stage one. The assessment is used to make a choice between the applicants.
7 Obtaining references from previous employers	Obtaining factual information about a prospective employee, usually through telephone or a written request. Confirming for example the nature of the previous job, the period of time in employment, the reason for leaving, and the salary. Opinions about character, competence, performance and suitability may be unreliable.
8 Checking the validity of the applications	Applicants may misinform their prospective employers about their education, qualifications and employment record, thus it is advisable to check with previous employers, universities etc. that the facts are correct.
9 Offering employment	Preparing the contract of employment and offering the job.
10 Following up	Following up the performance of the new recruit. If problems arise, it is better to identify them fast. Another reason for following up is to find out why a the selection process led to a misfit so that the process can be improved.

Berry (2003) suggests that during the *Defining requirements and developing a selection measurement plan* phase, the information gained from the job analysis is evaluated. Based on this, the relevant assessment methods need to be identified and evaluated. The evaluation

<sup>3</sup> For example Berry (2003) suggests that the first phase of the employee selection process is simply job analysis.

should take into account how the methods assess the identified knowledge, skills, abilities and other characteristics (KSAOs) of the worker, how efficient and valid the methods are, what are the costs, and are the measures causing adverse impact. As an outcome of the evaluation, a selection plan matrix is often developed. The selection plan matrix is also referred as *Dimension x exercise matrix* in assessment centers. The selection plan matrix shows all worker characteristics or dimensions and with what methods the dimensions are measured in the selection process. (Berry 2003, p.169) An example matrix can be seen in Appendix 2.

Some research suggests that the employee selection process should start with screening and continue with the identification of the best applicants. The aim of the screening phase in the beginning of the process is to eliminate the lowest scorers, reduce the size of the applicant pool, and make it easier to identify the best applicants with other methods such as interviews. (Farr & Tippins 2017; Mueller-Hanson et al. 2003; Metchik 1999) The screening and the ‘selecting the best applicant’ approaches are also called “screen-out” and “screen-in” or “select-out” and “select-in” approaches (Mueller-Hanson et al. 2003; Landy & Conte 2013). In a “screen-in” or “select-in” approach, the employer hires the applicants that achieve the highest rank orders based on test scores (Mueller-Hanson et al. 2003). Another definition for screening in, especially with personality tests, is seeking information about positive attributes that might predict the applicant’s outstanding future job performance (Landy & Conte 2013, p.125). The “screen-in” approach assumes that the relationship between the score and the actual performance is linear, meaning that a high rank predicts high performance. On the other hand, in the “screen-out” or “select-out” approach the employer excludes the applicants that do not fulfil a minimum predetermined qualification level or cutoff score. (Mueller-Hanson et al. 2003)

## **2.2. Employee selection in SMEs**

There has been very little research about employee selection practices in SMEs. Through time, researchers point out that the literature of employee selection focuses on large organizations. Bartram (1995) argues that a lot is known about selection practices in large organizations. However, the literature fails to provide any studies related to the selection and recruitment procedures in small companies, despite the fact that small companies account for the vast majority of job vacancies and job turnover (Bartram et al. 1995).

Similarly, Williamson (2000) disclosed that even though 99 percent of the employers in US at the time were small firms, existing research on recruitment and selection focused nearly entirely on medium and large companies. Williamson (2000) reviewed all articles published in top US academic journals<sup>4</sup> between 1988 and 1998 and found that only seven out of 207 articles discussed personnel selection, hiring issues or recruitment in small businesses, or had small businesses in their sample.

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<sup>4</sup> Academy of Management Review, Personnel Psychology, and Journal of Applied Psychology



Recently, also Wyatt et al. (2010) and Cameron (2008) argued that the literature on employee selection tends to focus on large organizations. Interestingly, there are a few relatively new studies focusing directly on SME's recruitment and employee selection, and they are from developing countries (Ofori & Aryeetey 2011; Wirba 2017; Ongori & Temtime 2010) and Japan (Gamage 2014). Unfortunately, due to the cultural and business differences, especially the studies from developing countries may not be relevant in Finland.

### **2.2.1. Selection methods and practices in SMEs**

According to Bartram et al (1995), small companies tend to utilize more unstructured and informal employee selection procedures than large organizations. Also Cameron (2008), Priyanath (2010) and Kotey and Slade (2005) report that SMEs seems to follow informal employee selection processes, such as unstructured interviews. Similarly, Carroll et al. (1999) found that small companies do not usually have formalized and systematic selection procedures. Unfortunately, according to Hargis and Bradley (2011), these informal methods rarely allow the SMEs to identify the best candidates from the applicant pool, since the informal methods do not provide enough useful information about the applicants.

The most often used selection methods in SMEs seem to be interviews and application forms. Di Milia and Smith (1998) reported the most popular selection methods in family-owned small firms were interviews and application forms. Similarly, McEvoy (1984) found that application forms and interviews accounted for 90 percent of the most often utilized employee selection methods in small businesses. Cameron's (2008) study about small businesses in Australia found that initial screening interviews were ranked as the most used method with a mean score of 5,23 on a seven-point scale, followed by reference checks (4,60) and unstructured interviews (4,15). Structured interviews were ranked as the fourth most used method (3,44), and application form was ranked fifth (3,14). According to the same study, testing was ranked as eighth with a mean score of only 1,79, which indicates that testing is not often used in small businesses. Interestingly, Kotey and Slade (2005) found that there was an increase in the use of a variety of selection techniques and methods when the company size grew from micro to medium.

Only a few sources mention how the employee selection process should be developed. Fleischer (2005, p.20) suggest that the whole employee selection process of SMEs usually consists of the following steps and methods: job description development, an application form, structured interview, pre-employment testing, and finally a background check for the few shortlisted applicants. Quite similarly, Carroll et al. (1999) mention in their study of recruitment and selection in small firms that the selection process consists of application form or CV sifting, shortlisting, interviews, possible reference checks, and making a selection decision. Also, initial telephone screening is sometimes used in the beginning of the process before sifting CVs or application forms (Carroll et al. 1999). However, neither of these sources studied why specifically these methods should be included in the selection process of SMEs, and why some other methods are excluded.

### **2.2.2. Characteristics and challenges of employee selection in SMEs**

One commonly mentioned general challenge of SMEs is their scarcity of resources. For example Greer et al. (2016) argue that because of resource scarcity and other “liabilities of smallness”, small companies struggle to compete with large businesses, and that this may also be the case in human resources, leading to simplistic and underdeveloped HR approaches. Also Bacon and Hoque (2005) suggest that SMEs may have insufficient capability to develop human resource management practices. Supporting the findings related to the resource scarcity, one study of employee selection in SMEs reported that the selection process was viewed to be unpredictable and costly in terms of management time (Carroll et al. 1999).

Related to the scarcity of resources, Bartram et al. (1995) argue that SMEs may lack a specific personnel function, and that employee selection is a part of someone else’s job, performed when necessary. The researchers continue that since small companies by definition have multi-functional management personnel, it is less likely that SMEs have standardized selection procedures. In addition, Cameron (2008) mention that since small businesses may lack the knowhow of conduction tests, extra expenses are created when third party professionals need to be utilized.

Another challenge that SMEs face is the cost of inappropriate hiring decisions. Carroll et al. (1999) state that the fewer people a company employs, the worse are the consequences of an inappropriate selection, since people cannot be moved to other departments. Also Gamage (2014) argue that selecting people that are not capable for the job or do not fit the culture of the SME can have an huge negative cost. One study found that small businesses seem to value “general desirable personal qualities”, placing more weight on personal characteristics like integrity, interest in the job, and honesty than abilities and aptitudes (Bartram et al. 1995). Lastly, SMEs should avoid focusing only on immediate needs, and rather think what kind of needs the company’s future strategies cause, and use them in the employee selection (Greer et al. 2016).

## **2.3. Job analysis**

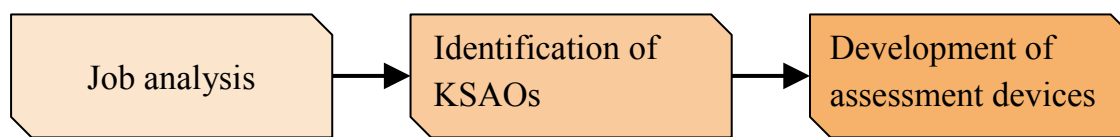
Conte and Landy (2013, p.176) define job analysis in the following way:

*“Process that determines the important tasks of a job and the human attributes necessary to successfully perform those tasks.”*

The purpose of the job analysis is to identify the important demands that are needed in the job, for example duties and tasks, and the required human attributes and worker capacities that ensure successfully carrying out the demands (Landy & Conte 2013, p.78; Berry 2003, p.169). In other words, job analysis aims to determine the required knowledge, skills, abilities and other characteristics (KSAO) such as experience, required trainings and personal characteristics that are required to be successful in the job. In addition, job analysis provides a list of tasks that the job includes. (Landy & Conte 2013, p.176)

Organizations use job analysis in multiple different ways: job analysis is often used for example for job descriptions, recruitment, selection, training, compensation, promotion and job design. Job analysis should be conducted prior to the employee selection process, but also prior to the recruitment process. (Landy & Conte 2013, p.176) However, since this thesis focuses only on employee selection, job analysis is discussed from the point of view of how it is used in the selection phase.

In employee selection, job analysis is needed for understanding what are the important KSAOs that predict job performance. Based on the job analysis, organizations choose or develop assessment tools for evaluating the identified KSAOs. Finally, with the results that the assessment tools provide, organizations make the selection decisions. Figure 2.1 describes how job analysis is used in employee selection. (Landy & Conte 2013, p.176)



*Figure 2.1: The role of job analysis in the employee selection process. Adapted from Landy and Conte (2013, p.181).*

Job analysis is typically divided into two different types. The task-oriented job analysis focuses on the tasks that the employee is performing in his or her job. In this approach, the work context, tools, machines and what is accomplished by the tasks are important. On the other hand, the worker-oriented job analysis concentrates on the characteristics and attributes that the employee need to have in order to excel in the job. In the end, both types of job analysis should provide the same outcome, which is a list of the necessary KSAOs. (Landy & Conte 2013, p.176)

Cook (2009, p.60) lists a few different techniques that are used widely for job analysis: critical incident technique, repertory grid technique, cognitive task analysis, future-oriented job analysis, and position analysis questionnaire (PAQ). Of these, PAQ is probably the most commonly used one. In PAQ, a trained job analyst gathers job related information, usually from supervisors and workers. PAQ includes approximately 200 elements that are divided into six areas: information input, mental processes, work output, relationships with other people, job context, and other. The information is then analyzed and compared with a large American database, and in the end the analyst gives his or her own review of the job. As an outcome of PAQ, the employer gets a profile of attributes that are needed in the job, a list of recommended tests and comparable jobs, and an estimate of the salary. (Cook 2009, p.61)

Job analysis has also been criticized. Since most of the job analysis techniques use subjective judgments, there is a possibility for bias. Gender, personality, ability, work attitudes, and wording can be sources of bias that may affect the job analysis. (Cook 2009, p.63) In addition, since jobs and the nature of work are changing, the traditional job analysis and the assump-

tions that it is based on may not work anymore (May 1996). Some researchers argue that for example competence analysis may complement job analysis (Roe 2005).

## **2.4. Selection criteria**

A criterion is defined by Landy and Conte (2013) as an outcome variable, which describes important demands or aspects of the job. Selection criteria are measured during the employee selection process and it is hypothesized that the higher the applicant scores in the selection criterion, the better he or she will perform in the actual job (Landy & Conte 2013, p.78). This section will discuss a few selection criteria that are often mentioned in the previous literature.

When discussing about selection criteria and selection methods, the most important property used by the research community is the term predictive validity. Predictive validity refers to the utility of the criterion or method: it is the ability to predict future job performance and other criteria. (Schmidt & Hunter 1998) Using criteria and methods with higher predictive validity result in significant enhancement of employee performance: higher output, higher monetary value of output, and enhanced learning of job-related skills (Hunter et al. 1990).

However, it is important to understand that predictive validities cannot usually be summed up, since two different predictive validities might predict the same underlying construct<sup>5</sup>. Also, the predictive validity correlation ranges from +1,0 to -1,0, and the predictive validities in employee selection very rarely exceed 0,5<sup>6</sup>. Lastly, predictive validity does not directly equal to probability: a predictive validity of 0,5 does not mean that the measurement works 50 percent of the times. (Landy & Conte 2013)

### **2.4.1. General mental ability**

General mental ability (GMA) is the first selection criterion to be reviewed, since it has been shown to predict future job performance better than job experience or any other disposition, ability or trait (Schmidt & Hunter 2004). GMA is usually measured with off-the-shelf cognitive ability tests that employers can purchase from HR and employee selection consultants and other service providers.

The terms general mental ability (GMA or “g”), cognitive ability, mental ability, intelligence and intelligence quotient (IQ) are often used as synonyms to describe the strong common core that cognitive tests share, and they may be considered interchangeable (Deary et al. 2010; Landy & Conte 2013, p.90) When referring to the selection criterion, general mental ability is the term that is often used in the literature (Landy & Conte 2013; Ones & Viswesvaran 2002; Viswesvaran & Ones 2002), thus the same term is used in this study. However, when tests are discussed, this thesis uses the term cognitive ability tests, since the literature usually refers to this term (Landy & Conte 2013; Salgado & Anderson 2002).

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<sup>5</sup> For example, cognitive ability tests and structured interviews might both measure GMA.

<sup>6</sup> A substantial correlation is 0,40 or above (Landy & Conte 2013). From individual criteria, practically only GMA has been reported to have a correlation above 0,5 in large meta-analysis (e.g. Schmidt & Hunter 2004).

GMA refers to a person's capacity to solve problems, reason and learn in different circumstances and ways (Landy & Conte 2013, p.90). The psychological construct of GMA was first introduced by Spearman (1904). GMA is a non-specific and general capacity that correlates strongly with all specific mental abilities and aptitudes, such as verbal, numerical, spatial and reasoning ability, memory and perceptual speed (Landy & Conte 2013, p.123). In employee selection settings, mental ability and intelligence refer to the "can do" aspect of performance (Landy & Conte 2013, p.101).

Large meta-analyses have shown that GMA has a predictive validity of 0,51, which is the highest reported validity of any selection criteria (Schmidt & Hunter 1998; Schmidt & Hunter 2004). Schmidt and Hunter (2004) state that GMA does not only predict performance: GMA has a predictive validity above 0,50 with performance on the job, performance in job trainings and with later occupational level. Furthermore, unlike some other selection criteria such as work experience, the GMA–job performance relationship does not weaken over the time. Viswesvaran and Ones (2002) argue that alternative predictors like work sample tests can at best serve as supplements, but never as substitutes for GMA. In addition, Schmidt and Hunter (2004) report that the more complex the job is, the better GMA predicts job performance.

There is some debate whether employee selection should utilize GMA or specific aptitudes as selection criteria. Some researchers support the specific aptitude theory, which suggest that specific aptitudes or abilities would predict future job performance better than the overarching GMA (Brown et al. 2006). However, Schmidt and Hunter (2004), who have conducted some of the most cited meta-analyses regarding GMA, argue that specific aptitudes do not predict future job performance better than GMA measures alone, thus the specific aptitude theory does not hold.

Also the Finnish literature suggests that GMA and cognitive abilities are important in employee selection. Keltikangas-Järvinen (2016, p.191) writes that mental abilities predict future job performance, but that assessing personality is generally viewed more acceptable than assessing GMA. Also Niitamo (2003, p.51) states that GMA has a high predictive validity, although he concludes that more research regarding the use of GMA specifically in the Nordics is needed. Lastly, Kaijala (2016) reports that it is important to assess the applicants' cognitive abilities. However, according to the author, companies do not need to find geniuses: in most of the tasks a specific cognitive ability level is enough, and higher levels of GMA might not necessarily provide better performance.

#### **2.4.2. Work experience**

Dierdorff and Surface (2007) define work experience as *"the degree of exposure that individuals accumulate in relation to performing the requirements of their work roles."* Work experience can be viewed at three different levels: task, job or organizational level. In addition, multiple factors, like amount, time, type and quality of experience affect work experience. The amount refers to how many times the individual has performed a specific task, whereas

time refers to job tenure. (Quiñones et al. 1995) Tesluk and Jacobs (1998) note that work experience consist of both qualitative and quantitative aspects.

According to Schmidt et al. (1986), work experience primarily affects on the acquisition of job knowledge. In addition, work experience also leads to acquisition of skills, methods, techniques and psychomotor habits.

Traditionally, tenure and seniority had been used almost interchangeably with work experience (Hofmann et al. 1992; Quiñones et al. 1995). However, work experience and tenure cannot be viewed as synonyms, since the same amount of time spent on a job does not have the same effects on all people: others improve more, and some may even get worse over time (Hofmann et al. 1992). Tesluk and Jacobs (1998) note that even though work experience is used extensively in employee selection, there is no clear theoretical framework for work experience.

Quiñones' et al. (1995) meta-analysis revealed that task level work experience was the best predictor of job performance. The correlations for work experience and job performance was 0,41 on task level, 0,27 on job level and 0,16 on organizational level. Furthermore, the highest correlation was reported when experience was measured as amount, which gave a correlation of 0,43 compared to the 0,27 for time. In conclusion, work experience is more than the length of time spent in a job, and the quantitative and qualitative dimensions need to be integrated (Tesluk & Jacobs 1998).

### **2.4.3. Job knowledge**

Dye et al. (1993) define job knowledge as *“the cumulation of facts, principles and concepts and other pieces of information that are considered important in the performance of one's job”*. Job knowledge is the link between both ability and job performance, and work experience and job performance. The greater the level of person's abilities, the faster job knowledge is acquired. Similarly, the more job experience an individual has, the greater level of job knowledge he or she will acquire. (Schmidt et al. 1986; Hunter 1983; Dye et al. 1993)

Job knowledge is closely connected to skills by supporting skills development. Job knowledge can be viewed as consisting of two different types of knowledge: procedural and declarative knowledge. Procedural knowledge refers to individual's familiarity with a procedure or process, and it may be viewed as including skills. Procedural knowledge is described as the “how to do things” knowledge. On the other hand, declarative knowledge refers to person's knowledge about facts and things: how well the person understands what is required to perform the job and its tasks, and knowing information about the job and tasks. Declarative knowledge can be viewed as “knowing that” kind of knowledge. (Cortina & Luchman 2012; Landy & Conte 2013, p.107) Job knowledge has been shown to predict job performance: Dye's et al. (1993) meta-analysis about written job knowledge tests presented a corrected mean validity of 0,45 for predicting job performance.

#### **2.4.4. Personality**

A simple definition for personality is the individual's typical way of responding. Personality is considered as a collection of traits. It is fairly stable, even though an individual might behave in a way that is not typical for his or her overall personality due to circumstances and situations. The most often used model for personality is called the Five-Factor Model (FFM) or the Big Five. The FFM consist of five dimensions that together describe the individual's personality: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. The FFM was created as a result of statistical and conceptual analysis of personality test information gathered over decades. In employee selection settings, personality addresses the "will do" aspect of performance. (Landy & Conte 2013, p.101)

Controversy and unease about how personality influences work behavior exists even today. The main criticism of using personality in employee selection is that personality causes only a small variability in job performance. The second criticism is that even if it is concluded that personality affects work behavior, job applicants will intentionally answer in a way that is perceived positive, which distorts the answers and makes the test scores useless. (Hough & Connelly 2013) Also Barrick and Mount (2012) address these issues. They conclude that even if the researchers have made great achievement within the past 20 years regarding personality, it is important that more theories are developed about when and how personality affects motivation, and how motivation in turn affects job satisfaction and job performance.

Many researchers argue that when appropriately analyzed and measured, personality is an important determinant of job performance and a valid selection criterion (Hough & Connelly 2013; Landy & Conte 2013). For example, personality does not correlate with cognitive abilities, thus combining personality and cognitive abilities in employee selection may produce better results than cognitive abilities alone (Hough & Connelly 2013). Also, there is relatively strong evidence that conscientiousness predicts job performance. Barrick's and Mount's (1991) meta-analysis showed that conscientiousness predicted the job performance of managers, professionals, police, sales, and those in skilled and semiskilled jobs. Conscientiousness had an estimated true correlation of 0,22 for future job performance. In addition, personality constructs have been shown to predict criteria other than job performance, which are important for organizations: for example dedication, organizational citizenship behavior, tenure and turnover, workplace safety, counterproductive work behavior and team performance (Hough & Connelly 2013).

#### **2.4.5. Person-environment fit**

Person-environment fit (PE) refers to a combined consideration of the characteristics of the person (P) and the characteristics of the environment (E). The P aspect includes the person's personal characteristics and attributes such as personality, KSAOs, demographic attributes, values, needs and goals. (Ostroff & Zhan 2012) On the other hand, the E component refers to the organization's culture, organizational climate, goals, job requirements, collective attributes and reward systems (Ostroff & Schulte 2007). The combination of P and E aspects represents the fit (Ostroff & Zhan 2012).

Fit between an individual and an organizational environment is linked to higher satisfaction and commitment, greater desire to join and less desire to quit, better performance and higher levels of helping and citizenship behavior (Kristof-Brown & Guay 2010). However, relatively little research has been conducted regarding the role of PE fit as a selection criterion in employee selection (Ostroff & Zhan 2012).

PE fit in employee selection has raised some concerns. For example, Ostroff and Zhan (2012) report that it may be inaccurate and biased to rely on a single decision maker's or interviewer's perception of the PE fit during the employee selection process. Also Arthur et al. (2006) voice concerns about fit in employee selection. The researchers studied person–organization (PO) fit, which focuses on the organization as the environment to be studied, and can be seen as a part of PE fit (Mercurio 2016). Arthur's et al. (2006) meta-analysis found that PO fit had a weak correlation of 0,15 when predicting job performance. On the other hand, PO fit had a modest correlation (0,24) to turnover, and a good correlation (0,31) to job attitudes. However, the researchers report that much of the PO fit and job performance relationship was mediated by work attitudes, which raises concerns. In conclusion, Arthur et al. (2006) suggest that enterprises and other organizations should exercise caution if using PO fit in employee selection.

Lastly, Edwards (2008) conclude that both recent and earlier theories of PE fit fall short of standards for strong theory. However, Ostroff and Zhan (2012) report that in organizations with a very strong culture PE fit may be an important driver of turnover and job performance, and that more research is needed about PE fit in employee selection.

#### **2.4.6. Grade point average**

Some employers tend to require that applicants submit their grade point averages (GPA) especially if the job is an entry-level position. Landy and Conte (2013) summarize previous research and note that GPA seems to predict the likelihood of one receiving a job offer. However, the research is not clear if GPA predicts future job performance or not, which should be far more important for employers (Landy & Conte 2013).

Some research suggest GPA does predict future job performance. For example Wise (1975) found that, against his initial hypothesis, academic achievements were linked to job performance. Wise (1975) also argues that academic achievements were not only correlating with performance, but the students productive ability was enhanced by the college education. Also Roth et al. (1996) claim that GPA is actually more valid in predicting future job performance than is generally believed. The study found a correlation of 0,16 with a corrected estimate in the 0,30s. However, the highest correlation was only for those who did the performance test one year after graduation, and the correlation decreased the longer the time period was between the GPA and the performance test. It is also noteworthy to mention that the study found differences in correlations of job domains, showing highest correlation for educational jobs,



followed by business, and lower correlations for medical and scientific jobs. (Roth et al. 1996)

Even though Roth et al. found evidence that GPA would predict future job success, the researchers point out concerns about the use of grades in employee selection. Firstly, the research does not fully know how GPA predicts job performance. It is suggested that GPA predicts general mental ability, which has shown to be a good predictor to job success. (Roth et al. 1996) In addition, Roth et al. note that even though their own research showed that GPA might be a valid predictor of job success, their validity in the 0,30s is similar to the 0,33 validity of unstructured interviews (McDaniel et al. 1994), which are not recommended to be used as a selection method. Cognitive ability tests' 0,50 (Hunter & Hunter 1984) and structured interviews' 0,44 (McDaniel et al. 1994) validities are significantly higher.

Finally, Landy and Conte (2013) argue in their book that there is not enough careful research done that would support using GPA as a selection criterion. They also note GPA appears to cause significant adverse impact against minorities. In addition, technology giant Google shares the view of Landy and Conte. In a recent interview Laszlo Bock (2013), Senior Vice President of People Operations in Google, stated the following:

*“One of the things we’ve seen from all our data crunching is that G.P.A.s are worthless as a criterion for hiring, and test scores are worthless — no correlation at all except for brand-new college grads, where there’s a slight correlation... ...After two or three years, your ability to perform at Google is completely unrelated to how you performed when you were in school, because the skills you required in college are very different. You’re also fundamentally a different person. You learn and grow, you think about things differently.”*

## **2.5. Pre-employment testing**

Pre-employment testing refers to the testing of the applicant's job suitability that occurs during the employee selection process. Multiple different types of tests are used: employers use for example skills, aptitude, integrity, personality, psychological, physical or drug tests to assess the applicants. (Arthur 2005) Cohen and Swerdlik (2009) note that the boundaries between aptitude, achievement and performance tests are often blurred. Some employees use pre-employment tests as the first screening step to select who will be invited to interviews while others test applicants only after interviewing them first. (Arthur 2005) Some research suggest that pre-employment tests should be used before interviews, since companies have been shown to both make better hiring decisions and reduce substantial costs for example by saving managers' time. (Bateson et al. 2013)

Pre-employment tests usually aim 1) to identify applicant characteristics that match the qualities and skills required in the job and that predict future job performance and 2) to predict acceptable and unacceptable behavior. Assuming that employers use only professionally vali-

dated and well-administered tests that are by default objective, the test are also used to minimize bias occurring in other selection process stages like interviews. (Arthur 2005)

Pre-employment tests have multiple advantages. Probably the most important advantage is the objective evaluation of applicant's knowledge, skills and abilities that are important in the job. (Landy & Conte 2013) For example Roth and Campion (1992) showed that knowledge and ability tests predicted future job performance. In addition, cognitive ability tests are a great way to measure the applicant's general mental ability, which is shown to be one of the best predictors of future job performance with a validity of 0,50 (Hunter & Hunter 1984). With the help of testing, the employer may also identify positive traits like conscientiousness, reliability, integrity, motivation and emotional stability and thus distinguish the superiority of two applicants with similar qualifications. Similarly, tests may be used to screen out applicants by identifying undesirable traits like psychopathology or substance dependency. Tests usually also guarantee that the employer is not sued for negligent hiring decision. (Arthur 2005)

However, not all agree about the usefulness of pre-employment tests. Some argue that all applicants do not perform well in tests even though they would perform well in the actual job. Others use and interpret tests wrong and think that tests will show which one of the candidates will perform best, while the tests actually only indicate who will most likely be successful. There is also reports that state that many applicants react negatively to testing and may not continue with the selection process or apply at all. (Arthur 2005)

According to Kotila (2005), pre-employment testing is used in Finland both in the industrial and service sectors. In both of these sectors, tests were used more often when recruiting management or senior salaried employees<sup>7</sup>. Within the whole sample, only ten percent of the companies used tests when selecting lower-level employees with administrative and clerical occupations, but 70 percent used tests when assessing management and senior salaried employees.

## 2.6. The selection methods

Selection methods aim to predict the applicant's suitability to the job. The selection methods assess to which extent the applicants' KSAOs, experiences and competencies match the person specification and other requirements of the job, and provide information to the decision-making. Applications forms, interviews and references are called the "classic trio" of selection methods. (Armstrong & Taylor 2014, p.236) This section will review how the research views the most often used selection methods.

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<sup>7</sup>Definition: "*A senior salaried employee acts in expert, supervisor, management and executive duties*" Finnish: ylemmät toimihenkilöt. Source: Ylemmät toimihenkilöt YTN Ry [http://www.ytn.fi/index.php?page\\_id=303](http://www.ytn.fi/index.php?page_id=303)

### 2.6.1. Assessment center

Landy and Conte (2013, p.135) define assessment centers (AC) in the following way:

*“Collection of procedures for evaluation that is administered to groups of individuals; assessments are typically performed by multiple assessors.”*

ACs can measure many different types of selection criteria. Usually AC exercises and procedures reflect job content and job related problems and measure for example interpersonal skills, planning and organizing, communication skills and analytical skills. (Society of Industrial and Organizational Psychology 2016; Cook 2009, p.203) A research conducted by Arthur et al. (2003) identified 168 dimensions that ACs might measure, and categorized them into six different groups: (1) communication, (2) consideration and awareness of others, (3) drive, (4) influencing others, (5) organizing and planning, and (6) problem solving.

A key element in AC is the multi-dimension multi-exercise assessment. This principle guarantees that any dimension that is being measured is assessed with at least two different methods, since a single evaluation method might give wrong or misleading results. Related to this principle, a *dimension x exercise matrix*, also known as a selection plan matrix, should always be created when designing an AC. (Cook 2009, p.203) A *dimension x exercise matrix* can be seen in table 2.2 and Appendix 2. According to Cook, an AC without a matrix plan is not a real AC (Cook 2009, p.203). The selection criteria that are measured at the AC should be based on a job analysis, and this seems to be a very common procedure: a survey conducted in 1997 found that 93 percent of ACs were based on a job analysis (Spychalski et al. 1997).

Table 2.2: Dimension x exercise matrix, adapted from Cook (2009, p.204).

	Influence	Numeracy	Delegation
Interview	X		X
Exercise A	X		
Exercise B		X	
Test C	X	X	
Test D		X	
In-basket exercise			X

ACs often combine multiple different types of assessment procedures and methods. For example, ACs can include situational exercises, simulations, interviews, cognitive ability and personality tests, in-basket exercises, paper-and-pencil tests and group exercises. (Cook 2009, p.204; Landy & Conte 2013, p.135; Society of Industrial and Organizational Psychology 2016) The use of different exercises can be seen in table 2.3. Group exercises are often leaderless group discussion that are rated by assessors. In in-basket exercises the applicant has to work with a typical in-basket: the candidate has to deal with all the elements that are in the basket by for example sending emails, making phone calls or writing memos. In simulations, the applicants might be evaluated for example according to their sales presentation or simulated meeting performance. (Cook 2009, p.203) Spychalski et al. (1997) studied the assess-

ment center practices of 250 organizations in the United States, and table 2.3 presents the usage of different exercises.

*Table 2.3: The use of different exercises in Assessment centers (Spychalski et al. 1997).*

Exercise used in AC	Percent of organizations using the exercise in their AC (n = 250)
In-basket exercise	82 %
Leaderless group discussion <b>without</b> an assigned role	59 %
Interview	57 %
Simulations	56 %
Analysis problems	49 %
Presentations	46 %
Leaderless group discussion <b>with</b> an assigned role	44 %
Fact finding exercises	37 %
Skills and ability tests	31 %
Self-evaluation	31 %
Peer evaluation	22 %

Assessors are typically managers or psychologists. Usually the assessors have had some sort of training how to observe and evaluate the different exercises and tests. There are many different ways in which assessors assess the exercises: sometimes one assessor assesses all applicants in all exercises, while sometimes some assessors rate only specific exercises, possibly seeing the applicant for the first time without having any previous information about the applicant. In most of the cases ACs end with an assessors' conference, where the assessors meet to discuss the evaluations and possible disagreements and agree on a final rating for each applicant. However, there is some evidence suggesting that simply calculating the average of the assessor ratings seems to lead to the same validity than what is achieved with assessors' conference. This means that the final conference may not be necessary. (Cook 2009, p.203)

There is some debate whether the assessors should assess the dimensions that are being assessed or the assessee's performance in different exercises. Hoffman et al. (2015) state that some studies, including their own, show a lower criterion-related validity when assessors rate exercises rather than dimensions. Nevertheless, their own study showed evidence that it is a valid method to use exercises as a unit of analysis and score performance in ACs. The researchers recommend that the best way may be to use a multifaceted perspective: in this way, both dimensions and exercises are considered in the design, interpretation and scoring of the AC. This perspective could for example mean that the assessee is judged by their overall exercise scores, overall dimension scores, and performance on dimensions within exercises. (Hoffman et al. 2015)

Most studies show ACs having a relatively good validity. Gaugler et al. (1987) conducted a meta-analysis that showed a 0,36 true validity for predicting future job performance. The same study found that the validity was not affected by the length of assessor training, whether feedback was given or not, number of observation days or assessee age. On the other hand,

validity was higher when ACs were using peer and self-evaluations, when the assessment was conducted by psychologists rather than managers, when the percentage of female assesseees was high and when the assessors used multiple evaluation devices. Spychalski et al. (1997) note that organizations may be ignoring two valuable methods: roughly one fifth of the organizations are using peer evaluation and one third self-evaluation in their ACs, as seen in table 2.3.

Not all previous studies agree about the high validity of ACs. Klimoski and Strickland (1977) point out that most of the AC research concentrate on predicting promotion but very few studies actually examine the correlation with job performance. Furthermore, the few studies of ACs are done in only a few organizations. The researchers suggest that "...we should not be overly impressed with the evidence of assessment center validity." (Klimoski & Strickland 1977) Hunter and Hunter reviewed previous literature and state that assessment centers seems to predict better promotion than performance. The researchers ponder that there might be two explanations for this: either supervisors and assessment centers share similar stereotypes of a good manager or alternatively supervisors generate better ratings of performance when they actually try to judge the assessee's promotion potential. (Hunter & Hunter 1984)

However, recent research speaks on behalf of ACs. Hoffman et al. (2015) found that AC exercises explained unique variance beyond the five factor model and general mental ability. The study showed that all the exercises that were studied, including in-basket exercise, leaderless group discussion, role-play, case analysis and oral presentation, correlated significantly with future job performance. Lastly, it seems that assessment centers are not often used in Finland: according to Kotila (2005), approximately only 10 percent of the companies use ACs when recruiting management and senior salaried employees. With lower-level employee groups, the use was 2-3 percents.

### **2.6.2. Cognitive ability tests**

Landy and Conte (2013) define cognitive ability tests the following way:

*"A test that allows individuals to demonstrate what they know, perceive, remember, understand, or can work with mentally; includes problem identification, problem-solving tasks, perceptual skills, the development or evaluation of ideas, and remembering what one has learned through general experience or specific training." (p. 120)*

Large meta-analyses have shown that from all the selection methods, cognitive ability tests have the highest reported validity of 0,51 for predicting future job performance. Due to this they are widely used in employee selection. (Schmidt & Hunter 1998) Another reason for their wide use is that the tests are easy and cheap to administer to large numbers either by paper and pencil or by computer. Administrators do not typically need to be particularly skilled and the scores are not influenced by applicant's impression management or fake responses. (Society of Industrial and Organizational Psychology 2016)

General mental ability and cognitive ability tests have been proven to be valid both in USA and in Europe (Landy & Conte 2013, p.95). Salgado and Anderson (2002) found that the corrected validities of cognitive ability tests in Spain and Britain, two countries with large cultural differences, were directly comparable to the meta-analytic results in USA. The results showed that cognitive ability tests were valid across occupations, and the authors argue that there is small room for speculating about the situational specificity of the validity in Britain and Spain. Salgado and Anderson (2002) also pondered that it seems that cultural differences are not that relevant in cognitive ability tests than what was previously believed. The findings suggested that validity generalization for GMA and cognitive ability tests is possible both within a country and cross-nationally. The same researchers found a year later similar results with country specific meta-analysis in France, Germany, Belgium, Netherlands, Spain and UK. This time the magnitude of the operational validities was even higher than typically in the American meta-analyses. The researchers state that their findings support the view that GMA tests are the best “stand alone” predictors in employee selection in all jobs. (Salgado & Anderson 2003)

Maybe the greatest concern regarding cognitive ability tests are the consistent group differences between different races. For example, Whites tend to score higher than Asians on comprehension and verbal ability tests, while Asians usually score higher than Whites on mathematical and quantitative ability measures. Whites tend to score on average also higher scores than Black and Hispanics. The difference between groups may be as much as one standard deviation and it may result in limited diversity. (Cohen & Swerdlik 2009)

Cognitive ability tests are usually divided into three categories, which are tests that produce a single score, tests of specific abilities and cognitive test batteries. The division derives from the ongoing debate if there are several distinct abilities or only one overarching cognitive ability, which is also called general mental ability or “g”. (Landy & Conte 2013, p.123)

One widely used test in employment selection is the Wonderlic Personnel Test (WPT). WPT is a paper-and-pencil speed test that assess adults’ mental ability. The test consists of 50 questions that test verbal, numerical, and spatial abilities, which the applicants try to solve in 12 minutes. Most of the applicants cannot solve all the questions in the given time. A new version of the test, Wonderlic Personnel Test - Revised, was introduced in 2007 and it uses newer technologies for test administration and scoring. (Kaplan & Saccuzzo 2012) WPT has been found to be a valid and reliable method to measure general intelligence (Dodrill & Warner 1988). Administering and interpreting the test is easy with the help of elaborate norms (Landy & Conte 2013).

### **2.6.3. Integrity tests**

Integrity tests are designed to assess the person regarding his or her honesty, dependability, trustworthiness, reliability and potential for employee theft and violence. They are used to screen out individuals who are likely to engage in inappropriate, dishonest, and antisocial

work behaviors. (Society of Industrial and Organizational Psychology 2016; Cohen & Swerdlik 2009). The two different types of integrity tests are overt test and covert test, which is also known as personality-based integrity test. The overt test consists of direct questions about attitudes, previous experiences and past honesty behavior such as stealing. The personality-based test focuses on assessing broad constructs such as conscientiousness, reliability and social responsibility and predicting integrity based on them. (Landy & Conte 2013)

In US, integrity tests are nowadays used substantially more than before after the use of lie detectors in most employee settings became prohibited (Cohen & Swerdlik 2009). Integrity tests seem to have an important role in employee selection, for example since the combination of general mental ability and integrity tests have been shown to be one of the best predictors of future job success with a mean predictive validity of 0,65 (Schmidt & Hunter 1998).

Integrity test do not come without disadvantages. Applicants may try to manage their impressions or even fake their answers in order to give a positive appearance. In addition, the applicants may dislike the test especially if the questions feel intrusive or unrelated to the job. (Society of Industrial and Organizational Psychology 2016) Cohen and Swerdlik (2009) note that research about integrity tests' validity vary from mixed to positive, and some researchers doubt if the tests measure what they should measure. Cohen and Swerdlik (2009) conclude that according to the literature professionally designed integrity tests are highly probable of meeting acceptable validity standards.

#### **2.6.4. Work sample tests and simulations**

According to Landy and Conte (2013, p.138) work sample tests assess job related skills and behavior under realistic job-like conditions. According to the Society of Industrial and Organizational Psychology (2016), work sample tests and simulations often measure job skills or knowledge, but skills such as analytical skills, organizational skills and interpersonal skills can also be assessed. One relatively recent and very wide meta-analysis determines work samples in the following way:

*“A test in which the applicant performs tasks that are physically and/or psychologically similar to those performed on the job” (Roth et al. 2005)*

Roth et al. (2005) also add that the procedures should be standardized and the scoring system developed with help of people who are experts in the specific job. Work sample tests and job knowledge tests might also be difficult to determine from each other. In early literature, the terms were sometimes confused, and both Hunter and Hunter (1984) and Roth et al. (2005) point out these limitations of the early studies.

Work samples have been shown to have a high validity: Hunter and Hunter (1984) reported a 0,54 predictive validity for job performance. Roth's et al. (2005) newer meta-analysis focusing only on work sample tests found a predictive validity of 0,33, and the researchers concluded that the result of Hunter and Hunter (1984) was too high in light of the new infor-

mation. Nevertheless, a large meta-analysis conducted by Schmidt and Hunter (1998) showed that the combination of work sample tests and cognitive ability tests had a mean predictive validity of 0,63, which is one of the highest reported predictive validities in employee selection.

Landy and Conte (2013, p.138) present that when using work sample tests, it is important to understand what the test is actually measuring. The researchers give an example of a call-center work sample test, where the applicant has to use a specific software. Good performance may result from three things: specific knowledge, general knowledge or cognitive ability. Specific knowledge means that the applicant is for example familiar with the same software, while general knowledge could refer to the applicant's general familiarity with computer operations. On the other hand, good cognitive abilities mean that the applicant is able to learn fast through trial and error and master the test. (Landy & Conte 2013, p.138) These differences might be crucial depending on the job in hand.

### **2.6.5. Job knowledge tests**

The purpose of job knowledge tests is to assess the applicant's technical or professional expertise and job specific knowledge that are required in the job. The tests consist usually of multiple choice questions or essays, and they might for example evaluate the applicant's programming language or blueprint reading skills. (Society of Industrial and Organizational Psychology 2016) Berry (2003, p.227) notes that the best format for job knowledge tests are multiple choice questions or true-false items, since this kind of tests can be scored objectively and they are less prone to bias.

Dye et al. (1993) report that job knowledge tests are usually characterized by the test's job specificity. The tests might be designed to evaluate a specific characteristic of a single job within a narrow setting or broad and general knowledge that is applicable in multiple different jobs. Testing an equipment malfunction might be important in a power plant operator job, so during the selection process the applicant might be asked to describe what kind of operations he or she would take in order to find out about the malfunction. This is an example of a specific characteristic of a single job. On the other hand, an example of the general knowledge might be testing what the applicant know about chemical reactions and how these reactions might be responsible for mechanical failure. This kind of knowledge is applicable in multiple different jobs. (Dye et al. 1993)

Dye et al. (1993) examined the validity of written job knowledge tests as predictors of job performance, and they found out that written job knowledge tests played a significant role in job performance. The meta-analysis presented a corrected mean validity of 0,45 for predicting job performance. The study showed that the validity of job knowledge tests is higher for more complex jobs. Furthermore, the validity was also higher when the job content was similar to the test content. The researchers argue that job-specific tests are always better than off-the-shelf tests and that employers can gain a lot by developing job-specific knowledge tests. Quite similarly, a recent study by Lievens and Patterson (2011) found a 0,54 predictive validity.



In addition to their ability to predict future job performance, job knowledge tests have multiple advantages. First of all, race or gender have been shown to have less difference in job knowledge tests than in other types of tests. Secondly, applicants may view job knowledge test positively if there is a clear relationship between the test and the job. Furthermore, job knowledge tests may provide important information about the applicant's training needs. Lastly, professionally administered tests are objective and are not affected by applicant's impression management or fake responses. (Society of Industrial and Organizational Psychology 2016)

The monetary impact can be both an advantage and a disadvantage for job knowledge tests. On one hand, job knowledge test may save money since they can identify the right applicants with right skills. On the other hand, developing the tests may be expensive and the test may need to be updated often. Another disadvantage of job knowledge tests is that the tests should usually not be used in occasions where the required and tested knowledge could be learned with a short learning period. (Society of Industrial and Organizational Psychology 2016)

#### **2.6.6. Personality tests**

Today, personality tests are widely used in organizations due to their efficiency and utility (Geisinger et al. 2013, p.320). One reason for this is the creation of the five-factor model that has enabled accessibility and easy manageability for the personality test users. Furthermore, a large number of meta-analysis have been published after 1984 and they all conclude that personality test scores correlate with job performance. (Tett & Christiansen 2007)

Companies use personality tests especially when selecting applicants for sales positions and for jobs that require good interpersonal skills. (Geisinger et al. 2013, p.320) Personality is often also tested in jobs that require team work (Society of Industrial and Organizational Psychology 2016). Thanks to the Internet, many personality tests are easily accessible for both employers and applicants since the tests can be administered online (Geisinger et al. 2013, p.320).

Personality tests are typically divided into screen-out and screen-in tests. The screen-in test measure usually normal personality and they are used to gather information about the applicant that predicts future job performance. Examples of these kinds of tests are Jackson Personality Inventory–Revised (JPI-R), 16 PF Select, NEO-PI, Hogan Personality Inventory and Saville Consulting Wave. The screen-out tests in turn measure for example psychopathology and they are used to eliminate candidates that are unsuitable for the job. Minnesota Multiphasic Personality Inventory II (MMPI-II), California Psychological Inventory (CPI), Personality Research Form (PRF) and Edwards Personal Preference Schedule are examples of screen-out tests that are designed to identify signs of psychopathology. At least in USA it is important to remember that tests designed to measure psychopathology are viewed as “medical tests” and they can be used first after offering employment. The reason for this is that emotional disorders are considered covered disabilities under the Americans with Disabilities

Act, and the test results might put the applicant in a disadvantage if the test is administered before offering employment. Tests that assess normal personality, like the screen-in tests mentioned earlier, can be used in the pre-employment selection process. (Landy & Conte 2013, p.125)

Not all agree that personality test should be used in employee selection. Morgeson et al. (2007) question if personality tests are useful at all in selection context. They argue that personality tests have multiple problems: the tests have often a disappointingly low validity for predicting job performance, the applicants fake during the tests, and the self-report tests measure poorly the constructs they are designed to measure. The researchers admit that faking cannot be avoided and that the literature do not agree how problematic faking is in the end. They continue that faking may even be job related or in some occasions socially adaptive. Morgeson et al. (2007) note that test validity does not seem to be enhanced by corrections for faking, but bogus items may catch the fakers. Also the Society for Industrial and Organizational Psychology (2016) state that individuals might not respond how they really are since they might try to create a positive decision outcome. Finally, Hurtz and Donovan (2000) summarize previous research and report that it is questionable if personality tests should be used in employee selection, since they only add a relatively small amount of explained variance, but the tests may produce negative applicant reactions.

Tett and Christiansen (2007) wrote a response to Morgeson's et al. (2007) paper, where they argue that with appropriate methods personality tests will yield even better results than achieved to date. Tett's and Christiansen's main response is that even though personality tests have been shown to have low validities, varying from 0 to 0,31 and with a 0,13 average, "commercial self-report personality test yield useful validity in relations with job performance when due consideration is given to relevant conditions" (Tett & Christiansen 2007). The researchers argue that the meta-analysis methods that were created to study the relationship between cognitive ability and job performance should not be used when measuring the link between personality and job performance, because that link might be bidirectional.

Tett and Christiansen (2007) also respond to Morgeson et al. (2007) about faking in personality tests. Tett and Christiansen (2007) present that faking does decrease the validity of personality tests in real selection settings, but there is still enough trait variance to predict job performance. Secondly, faking is not constant, and job candidates fake in different degrees. Lastly, the researchers argue that there is no rational or empirical ground that would indicate that faking might be a desirable and job-relevant characteristic that would predict future job performance. (Tett & Christiansen 2007) Also Viswesvaran et al. (2001) study support the opinion that the desire to look good, which is often viewed as faking, is not a relevant characteristic: the study found no correlation between test taker's supervisory ratings on interpersonal skills and his or her desire to look good.

Tett and Christiansen (2007) state that personality tests have a useful level of validity under certain conditions, and to avoid the problems that Morgeson et al. (2007) reported, more attention needs to be given to positive and negative trait-job performance relationship and to

strong versus weak linkages. However, the researchers note that it may not be wise to use the general and broad five factor model traits such as conscientiousness in employee selection, since in some jobs the characteristics of conscientiousness might even have a negative correlation with job performance. (Tett & Christiansen 2007) An example of this is a study conducted by Hogan et al. (1992), which found -0,34 and -0,18 correlations between managerial performance and “planful” and “perfect”, components of prudence, which is a facet measure of conscientiousness from the Hogan Personality Inventory.

Despite Tett’s and Christiansen’s view about conscientiousness, one reason why personality tests are used widely in employee selection is that there is strong evidence that conscientiousness predicts job performance. Barrick and Mount (1991) showed that conscientiousness predicted the job performance of managers, professionals, police and those in skilled and semi-skilled jobs. Also Hurtz and Donovan (2000) conclude that across jobs and criterion dimensions conscientiousness seems to add a small portion of explained variance in job performance. Hurtz and Donovan (2000) note that even the small explained variance that personality tests seems to have can cause a significant contribution in predicting the future job performance if the personality measurement method, such as five factor model, does not correlate with other predictors that are used in the employee selection process. For example, cognitive ability does not generally correlate with personality. (Hurtz & Donovan 2000)

In conclusion, even though conscientiousness seems to predict future job performance across different jobs, and other five factor model dimensions tends to predict certain criteria for certain jobs, personality tests, even testing conscientiousness, should not have a similar status than general mental ability tests in employee selection. (Hurtz & Donovan 2000)

### **2.6.7. Interviews**

The research is unanimous that interviews are nowadays the most popular approach to assessing candidates for employment (Furnham 2008; Moscoso 2000). Interviews are also the most popular employee selection method in Finland: Kotilainen (2005) found that regardless of the organizational level, approximately 80 percent of the companies use interviews in their employee selection process. Managers tend to value interviews more than psychological test results (Lievens et al. 2005). In the past, interviews were often rather casual events with no or low structure. As a result, some argue that unstructured interviews, which generally have poor reliability and validity, usually hinder the objective decision-making. Interviews have been accused of giving unreliable, biased, subjective and invalid data. (Chamorro-Premuzic & Furnham 2010; Armstrong & Taylor 2014) Another reported disadvantage of interviews is that the interview depends highly on the interviewer’s skills, and although people might think that they are good at interviewing, in reality many of the interviews are not (Armstrong & Taylor 2014, p.237). On the other hand, structured interviews have been shown to have high validity and reliability that can rival the levels demonstrated for mental ability tests, work sample tests, and scored biographical inventories (Schmidt & Zimmerman 2004).

Interviews typically last from half an hour to one hour, and during this time the interviewer asks approximately 20 to 30 questions. In average half of the questions are open-ended. (Geisinger et al. 2013) Interviews usually evaluate from 3 to 18 different dimensions, 7 being the average, and the most often assessed dimensions are social skills, personality dimensions, and mental ability. Researchers note that it is odd that interviews are so widely used to assess personality and mental ability, since both can be tested with affordable, possibly more accurate and easily available tests. (Huffcutt et al. 2001)

### **Structured and unstructured interviews**

The most typical way of categorizing interviews is dividing them into unstructured and structured interviews. The research shows consistently that adding structure to interviews improve both validity and reliability. According to probably the most extensive meta-analysis of the topic, structured interviews had a validity of 0,44 and unstructured interviews 0,33 regardless of the interview content. (McDaniel et al. 1994) McDaniel et al. (1994) emphasize in their study that the unstructured interviews were most likely a lot more structured than those usually conducted in applied settings, since the interviewers used rating instruments even if they studied unstructured interviews in order to obtain a correlation between the criteria and interviews. Arguably most of the unstructured interviews that are conducted in companies do not use proper rating instruments. Another research points out a larger difference, suggesting that structured interviews had 0,56 and unstructured 0,20 validity (Salgado & Cooper 1999).

Structured interviews are also highly reliable. McDaniel et al. (1994) reported that structured interviews have reliabilities in the 0,80s while unstructured had reliabilities in the 0,60s. According to another meta-analysis, structured interviews had a reliability of 0,67 compared to the 0,34 for an unstructured interview (Conway et al. 1995).

Landy and Conte (2013, p.132) define structured interviews in the following way:

*“Assessment procedure that consists of very specific questions asked of each candidate; includes tightly crafted scoring schemes with detailed outlines for the interviewer with respect to assigning ratings or scores based on interview performance.”*

According to Geisinger et. al. (2013, chap.27), structured interviews should at least consist of the following elements:

- All applicants answer to same questions.
- Questions are job related and preferably based on a job analysis.
- Interviewers use a scoring protocol and numerical rating scales.

### **Legal aspect of interviewing**

It seems that structured interviews are also superior to unstructured ones in the eyes of law. During the discrimination related legal actions the structured interviews appear to yield better legal defense. (Geisinger et al. 2013, chap.27) Most of the studies related to the illegalities of

selection procedures come from the US, and due to the national differences in law, the studies may not be generalized. Nonetheless, three main themes that should be taken into account seems to emerge from the studies:

1. Structured interviews are suggested to be less biased.
2. Discrimination is less likely if the rated criteria are based on a job analysis and if the criteria are particularly task related and specified in objective behavioral terms.
3. Biographical data that are collected using application forms are not used by the interviewers.

(Chamorro-Premuzic & Furnham 2010, chap.2)

In conclusion, legal situations concerning interviews may be avoided if the employer asks only job-related questions that are related to the requirements, responsibilities and duties of the job. Race, color, religion, sex, national origin, age, disability or pregnancy should in general not affect the selection decision, and it is recommended to avoid asking about them. (Arthur 2005, chap.5) Race should never affect the selection decision. In addition, the only exception when the other previously mentioned attributes may possibly be used a basis for selection is if they can be shown to be fundamental requirements of the job or bona fide occupational qualifications. (Geisinger et al. 2013, chap.27)

### **Number of interviewers**

Interviews can be held by an individual interviewer or by multiple interviewers. Panel interviews, which are also called board interviews, are in general more accurate and reliable than individual interviews (Chamorro-Premuzic & Furnham 2010). Also Wiesner and Cronshaw (1988) suggest that panel interviews may be more valid than individual interviews. In panel interviews, the applicant is interviewed by two or more interviewers who each rate the applicant (Wiesner & Cronshaw 1988). Structured panel interviews have been shown to have 0,56 validity for predicting future job performance (Campion et al. 1988). Roth and Champion (1992) found that panel interviews were a valid predictor for job performance and that the panel interviews were actually as valid as cognitive ability tests in predicting the future performance. Furthermore, the same research showed that panel interviews also had a positive effect on the variance accounted for performance. In Finland, panel interviews are used significantly more often when companies are recruiting employees for higher organizational levels: in management recruitments 49 percent of the companies used panel interviews, and with the senior salaried employees the number was 45 percent. On the other hand, with lower-level employees with administrative and clerical occupations 24 percent of the companies used panel interviews, and with workers only 10 percent utilized the method. (Kotila 2005)

### **Situational, behavioral and conventional interviews**

Salgado and Cooper (1999) divide interviews into behavioral and situational types. Situational interviews ask what the applicants would do in hypothetical situations, whereas the behavioral interviews focus on questions that ask what the applicant did in different situations in the past. The logic behind behavioral interviews is that past behavior should predict future behavior. Situational interviews, on contrary, are based on the goal setting theory that indicates that in-

tentions predict behavior. Questions in both situational and behavioral interviews should be derived from the results of a job analysis. (Kataoka et al. 1997) Behavioral interviews tend to measure a combination of general mental ability, job experience, job knowledge and social skills. (Moscoso 2000)

Salgado and Cooper (1999) argue that situational interviews have a validity of 0,50 while behavioral interviews' validity stays at 0,39. McDaniel et al. (1994) examined three types of interviews, situational, job related and psychological, and the research also found out that situational interviews yielded the highest mean validity of 0,50 for job performance. Job related interviews' validity was 0,39 and psychological interviews' 0,29. On the other hand, Taylor's and Small's (2002) comprehensive meta-analysis noted that behavioral interviews performed slightly better than situational interviews. It is noteworthy to point out that according to Kataoka et al. (1997) highly standardized situational interviews are less prone to rating biases.

Differing from situational and behavioral interviews, the conventional structured interviews usually include job-related questions that focus on achievements in previous jobs, job responsibilities, job knowledge and duties. These interviews are not always derived from formal job analysis. (Kataoka et al. 1997) According to Moscoso (2000), conventional interviews focus on evaluating general mental ability, social skills and personality dimensions like emotional stability and extraversion.

#### **2.6.8. Videoconference interviews**

Interviewing candidates with the help of videoconference is a relative new method and there has not been enough research yet to conduct a final conclusion about its effects to the interview process. However, previous research seems to indicate that a structured videoconference is a valid method for interviewing job applicants. Kobak et al. (2008) found no statistically significant difference in inter-rater reliability between face-to-face interviews and videoconferences. According to Kobak, there seems to be no loss of signal while using remote assessment. Tiller et al. (2013) came to similar conclusion while examining the difference between multiple mini-interviews (MMI) and internet-based multiple mini-interviews (iMMI). The result was that interviewers using the iMMI process, which was executed via videoconference, made valid and reliable decisions that were comparable with the traditional face-to-face MMI results. Hyler et al. (2005) reviewed a large literature about telepsychiatry but found only a few studies comparing telepsychiatry and face-to-face (FTF) interviews directly. The researchers noted that studies comparing telepsychiatry and FTF interviews with standardized assessment instruments show no difference in accuracy or satisfaction.

Also touching the topic of video interviewing, a study showed FTF interview ratings being significantly higher than the ratings of the recorded video of the same interview. In addition, the correlation between interviewer ratings in a FTF panel interview was significantly higher than the correlation between FTF and video ratings. The researchers point out that they found no evidence that individuals evaluating video interviews would reduce the construct-related validity of structured interviews. In addition, the lower means of the recorded video inter-

views may help to reduce the leniency effect, which is common in FTF interviews. The study suggests that recorded video interviews may be worth a consideration for selection and promotion purposes. (Van Iddekinge et al. 2006)

In conclusion, Luxton et al. (2014) note that there are gaps in the previous research of the remote psychological assessment and that the majority of the assessment tools are designed for traditional FTF procedures. They suggest further research of the topic and practitioners to keep up with the scientific literature.

### **2.6.9. Telephone interviews**

The literature regarding telephone interviews and their comparability to face-to-face interviews is limited (Silvester & Anderson 2003) and even contradictory. The research seems to agree that telephone interviews should be based on the same principles than face-to-face interviews. For example Berg (2000) suggests that qualitative telephone interviews are likely to give best results if the interview is structured or semi-structured.

Silvester et al. (2000) found that applicants were rated significantly higher when interviewed face-to-face (FTF) than when interviewed by telephone. The study also indicates that the applicants who first were interviewed by telephone received significantly higher interview ratings in the following FTF interview. Similar effect was not found when applicants were first interviewed FTF following by a telephone interview. Also Schmidt and Rader (1999) came to a conclusion that telephone interviews may be a suitable selection method since it led to a validity comparable with FTF interviews. In their research the interview was constructed empirically and administered by telephone. Differing from traditional interview structure, the interview was scored later based on the recording. The interviews were shown to have mean true validity of 0,40, which is close to the mean true validity of 0,44 that McDaniel et al. (1994) found in their large meta-analysis of FTF interviews.

In another study, Sturges and Hanrahan (2004) studied the potential difference of FTF and telephone interviews in a qualitative research. According to the researchers, the prior literature indicates that FTF and telephone interviews may lead to different results. Although the findings might not be directly translated to employee selection purposes, Sturges and Hanrahan (2004) found in their own study no differences between FTF and telephone interviews, and they suggest that telephone interviews can be used in qualitative research.

On the other hand, opposite to the Silvester et al. (2000) study, a study conducted by Straus et al. (2001) demonstrate that applicants were rated less favorably in FTF interviews than in the telephone interviews. The researchers suggest that the telephone interviews filter out less favorable visual characteristics, which leads to higher ratings in the telephone interviews.

In conclusion, Silvester et al. (2000) suggest that organizations should be aware of the possible differences of telephone and FTF interviews and train their interviewers accordingly. The

researchers also point out that it would be wise to use telephone interviews always for either all or no applicants.

### **2.6.10. One-way video interviews**

One-way video interviews (OWVI) are pre-recorded interviews, where the interviewee does not interact with the interviewer. The interview questions are presented either in text, audio or video format on a computer, smartphone or tablet. The applicant needs to have a device with a web camera and audio capabilities in order to record his or her answers to the questions. Some systems force the applicant to answer immediately after seeing the question and also give the applicant only one change to record the answer. On the other hand, some other applications enable the applicant to see the questions in beforehand and provide unlimited takes. Afterwards, the persons that are responsible for the assessment can review the recorded videos whenever they want. (Poh 2015)

The literature refers to OWVI with multiple different terms. At least ‘video interview’, ‘one-way video interview’, ‘video resumes’ and ‘pre-recorded video interview’ are used. Since ‘video interview’ and ‘pre-recorded video interview’ can possibly both be confused with two-way interviews with interaction between the interviewee and interviewer, this paper will use the term ‘one-way video interview’.

One-way video interviews are becoming more and more popular nowadays, mainly since employers value the time and cost savings the method can provide (Poh 2015; Harmsel 2011). There are multiple different service providers, Hirevue ([www.hirevue.com](http://www.hirevue.com)), SparkHire ([www.sparkhire.com](http://www.sparkhire.com)) and Recruitby.me (<https://recruitby.net>) being a few examples that together have extensive customer reference lists including for example Delta Air Lines, United States Postal Service, Hilton, Vodaphone, Uber, Finnair, Valmet, Kesko and Supercell.

OWVIs are usually at least semi-structured due to the fact that all applicants receive the same questions in the same order by default. Harmsel (2011) states that based on the different available technologies, OWVIs seems to be highly structured, since the interview is conducted in similar way for every interviewee and the questions are determined in beforehand. However, it is important to point out that like discussed in the interviews section, in order to OWVIs to be counted as a structured interview, the interviewers should also use a scoring protocol and numerical rating scales. (Geisinger et al. 2013, chap.27) From this perspective, OWVIs can be seen as semi-structured interviews if no scoring protocol is used, since OWVIs fulfil the two other requirements<sup>8</sup> for structured interviews.

Employers usually use OWVIs during the first phases of the selection process, and OWVIs often replace phone interviews (Guchait et al. 2014; Toldi 2011) Poh (2015) reports OWVIs having multiple benefits: OWVIs eliminate the need to schedule meetings, long distances do not matter, and applicants can answer the questions whenever they want. In addition, the an-

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<sup>8</sup> 1) All applicants answer to same questions and 2) questions are job related and preferably based on a job analysis.



swers can be watched and evaluated as many times as needed by the people who are responsible for the assessment. Lastly, interviewer characteristics do not affect the applicants' behavior since the interviewer is not present.

However, the previous literature about OWVIs is insufficient. Poh (2015) points out two major gaps. Firstly, the earlier research does not understand applicant reactions to OWVIs. Secondly, applicant performance in OWVIs have not been studied thoroughly and it is not known if some applicants are for example performing poorly because of the unfamiliar selection tool. Harmsel (2011) conducted a comprehensive literature review regarding e-recruitment and especially the use of web camera technology in employee selection. Of the 77 articles he reviewed, none discussed how OWVIs predict future job success or their incremental validity over other employee selection methods.

Even the few researches about OWVIs are contradictory or inadequate. Two studies, Toldi (2011) and Guchait et al. (2014), focused on the applicants' perspective of OWVI, procedural fairness and if the applicants favor OWVIs compared to other interview types. Toldi (2011) report that applicants reacted positively to OWVIs, while Guchait et al. (2014) argue that applicants found OWVIs awkward, cold and impersonal. Poh (2015) found that applicants did not favor OWVI nor telephone interviews. Poh (2015) also studied if the performance of OWVI correlate with phone interviews and found out that the relationship approached significance, and that applicants performed slightly better in OWVI than in phone interviews. However, the study was conducted with students, so the results might not be generalizable, and the sample size of 30 results in unstable correlation coefficients.

In conclusion, more research about OWVI is needed before any conclusions about OWVI's validity as a selection method can be drawn. Nevertheless, Toldi (2011) suggests that if employers use OWVI in their selection process, they should at least make sure that applicants fully understand how OWVIs works and how it benefits both the applicant and the employer.

### **2.6.11. Resumes, CVs and self-reported data**

Resumes, CVs and application forms, which are used to measure biographical data, are together the second most used selection method after interviews (Robertson & Smith 2001). Bright and Hutton (2000) summarize recent research and note that it is surprising how few empirical and theoretical studies have been conducted about resumes. Screening resumes and CVs is usually a part of the initial screening practice, even though research points out that screening resumes is less valid and reliable than for example structured interviews (Fritzsche & Brannick 2002).

There is some evidence that work experience and educational background in resumes are linked to the recruiter's perceived person-job fit, which will increase the likelihood of hiring recommendations. Tsai et al. (2011) found that hiring recommendations were increased by the recruiter's perceived person-organization fit. However, the research focused only on perceived fit and hiring recommendations, and the researchers recommended themselves that ad-

ditional studies should be conducted to find out if the content of the resume predict actual future job performance or turnover. (Tsai et al. 2011)

Fritzsche and Brannick (2002) write that most of the previous studies regarding resume reviews are based on studies using laboratory-created stimuli and are done with resume profiles, not with real resumes. Due to this, Fritzsche and Brannick (2002) studied the difference between judgments of real resumes and judgments of corresponding profiles and found out that inferences based on resume profiles were not generalizable to inferences based on real resumes. Judgments of resume profiles were more favorable, better predictable and consistent among recruiters than judgments of actual resumes. The study suggests that resume screening is not a reliable process since recruiters seem to use inconsistent judgment strategies, which they also change over time. As a result, *“interviews appear to be granted as much by luck and whim as by merit.”* (Fritzsche & Brannick 2002)

Similar results have been presented by another study that also used real resumes. Keith (2008) found that recruiters did not make consistent judgments about real resumes. Furthermore, the same study points out that the recruiters were internally inconsistent, which indicates that the recruiters evaluated different resumes in different ways, similarly to Fritzsche's and Brannick's (2002) findings.

Research has also showed that physical attractiveness, sex and scholastic standings affect the evaluation of resumes. Both students and professional recruiters rated males, physically attractive persons and applicants with high scholastic standings more favorably. (Dipboye et al. 1975) Similarly, Bright and Hutton (2000) found out in their study that the chance to get an invitation to an interview increased by attractiveness. Furthermore, the same study points out that self-reported competency statements increased the likelihood of receiving an invitation to an interview. Applicants who were evaluated poorly in other respects improved most their chances to get an invitation to an interview if they had competency statements in their resumes. Competency statements are candidates' self-evaluations, such as *“I'm highly motivated with a proven track record in sales and achieving targets”*, and it is difficult to verify their veracity. The results of the study question the idea that applicant fit would be the main reason for selection decision in resume review. (Bright & Hutton 2000)

Thoms et al. (1999) presented that even resume characteristics such as length affect the likelihood of receiving an invitation to an interview. The study noted that for example one page resumes were better than two page resumes and listing a 3,00 GPA was better than not having any GPA in the resume. The researchers conclude:

*“If resume characteristics are valid predictors of who will be chosen for an interview, is this (resumes) a valid or fair way to screen people for professional positions?”*

## **2.6.12. Biographical data and application forms**

Landy and Conte (2013, p.144) define biographical data or biodata as information collected with an application form or with some other standardized way. The information is collected with questions regarding education, previous jobs, specialized training, and personal history. The literature uses multiple different terms to describe forms that the applicant fills in during the employee selection process: application form, application blank, pre-employment inquiry, employment application, weighted application and job application being a few examples (Wallace & Vodanovich 2004; Wallace et al. 2000; Patterson et al. 2009; Piotrowski & Armstrong 2006).

The idea behind biodata is that one's past behavior predicts one's future behavior (Geisinger et al. 2013, p.437). Biodata test's content may vary a lot but usually it consist of information about the applicant's previous jobs, education and trainings, specific job knowledge and skills, leadership and teamwork skills and personal history (Society of Industrial and Organizational Psychology 2016; Landy & Conte 2013, p.144). Biodata may also include items regarding personality, individual attitudes, self-appraisals, interests, hobbies and recreational preferences (Society of Industrial and Organizational Psychology 2016; Geisinger et al. 2013, p.437). An important aspect about biodata is that the information should preferably be collected with tests, application blanks or other procedures that are standardized and that have objective scoring (Landy & Conte 2013, p.144).

Biodata items have multiple advantages. Most importantly, biodata have been shown to predict future job performance and turnover. Secondly, administrating biodata items is usually relatively cheap and it can be done with computers or paper and pencil blanks. The administrators do not require special skills, and biodata items do not usually discriminate against race or gender. However, if the biodata items are not bought off-the-shelf, developing the test might be time consuming. In addition, applicants may try to fake or manage their impressions when responding. (Society of Industrial and Organizational Psychology 2016)

The predicting power of biodata is caused by job relatedness and by the constructs the biodata instrument is measuring, such as knowledge, experience, personality or cognitive ability (Landy & Conte 2013, p.144). Many studies have shown that biodata items predict future job performance (Reilly & Chao 1982). Reilly and Chao (1982) summarized that multiple studies show a relationship between biodata and future job performance and that biodata items had validities similar to those for standardized tests.

The literature indicates that combining biodata to other selection methods may provide good results. The validity of biodata items was found to be above the validity of interviews, reference checks, academic achievements and self-assessment (Reilly & Chao 1982). Dalessio and Silverhart (1994) showed that interviews combined with biodata items improved the prediction of future job success. In a similar way, Mount et al. (2000) found that biodata items accounted for incremental variance even beyond what was accounted by general mental ability (GMA) and five factor model (FFM). Landy and Conte (2013, p.144) summarize that the pre-

diction of job success can be enhanced by combining other selection methods, such as interviews, GMA and FFM to biodata. However, the researchers ponder that biodata might not add anything if the selection process combines in a comprehensive way tests and items including GMA, personality, job knowledge and interest inventories (Landy & Conte 2013, p.144). In conclusion, Reilly and Chao (1982) state that biodata is likely to be valid and thus should be considered as an alternative selection method.

In Finland 60 percent of employers used application forms when recruiting senior salaried employees, lower-level employees with administrative and clerical occupations and workers. On the other hand, only 37 percent of the companies used application forms in management recruitments. (Kotila 2005)

### **2.6.13. Reference check**

Past behavior has been shown to predict future behavior (Ouellette & Wood 1998). Similarly, reference checks are based on the idea that past performance predicts future performance, which means that the evaluation of the previous employer should have some value as a selection method. Employers might check applicant's references with structured methods, such as checklists and ratings, or with unstructured methods. Reference checks usually collect information about knowledge, skills, personality and mental ability, and they can also go straight to the point by asking about previous work performance. Reference checks can be written or conducted by telephone, and they are used in all selection phases depending on the employer: some use reference checks for final check on qualifications, while others use them in early stages like during sifting. Reference checks conducted with telephone are usually fast, employers can examine the referees tone of voice and possible hesitation, and further questions and clarifications can be asked. (Cook 2009, p.94)

Some research indicate that reference checks could add value to the selection process. Taylor et al. (2004) studied structured telephone reference checks (STRC) and concluded that STRC had 0,25 uncorrected and 0,36 corrected correlation with future job performance. The researchers also suggested that organizational citizenship behavior may possibly be easily evaluated with reference checks. A meta-analysis conducted by Hunter and Hunter (1984) reported reference checks having a mean validity of 0,23 when predicting the performance in training. In addition, reference checks had a 0,09 incremental validity over general mental ability tests. Lastly, Taylor et al. (2004) report that reference checks might have incremental validity over ability and skill tests since references seem to cover typical, not best behavior.

On the other hand, other studies suggest that reference checks might not be valid predictors for future job performance. Reilly and Chao (1982) argue that reference checks had low validity in employment settings. They also note that reference checks suffer from low reliability, leniency error and by previous employers' poor response rate. Due to this, only a limited segment of applicants has proper references available, meaning that comparison is difficult. Reilly and Chao also state that some researchers question whether reference checks provide unique predictor information that would add information to other methods. Also Cook (2009,

p.94) report that the leniency error has caused many researchers to dismiss the validity of reference checks.

At least in US the law is one reason that may prohibit the effective use of reference checks. People are suing employers for giving unfavorable or fallacious references. This has led to a situation where employers often refuse to give any opinion about previous job success, and provide only the minimal references that include job title, dates of employment and possibly salary. On the other hand, employers might also be sued if they do not provide important information about serious misconduct at work to another employer. To solve this dilemma, most states have ruled that employees cannot anymore sue the previous employer if the information was given in good faith. (Cook 2009, p.10)

In summary, the literature regarding reference checks is mixed. Taylor et al. (2004) state that even though reference checks are very widely used, there is surprisingly little research about it. Some research indicate that reference checks are a valid employee selection method, while other state the opposite: for example Reilly and Chao (1982) argue that due to their low validity they do not recommend reference checks to be used in the selection process. The researchers continue that if reference checks are used, they should be used in a limited way for a small number of people in order to eliminate those who are not suitable for the job. Nevertheless, in Finland approximately 50 percent of the employers used reference checks when selecting management and senior salaried employees. With lower-level employees with administrative and clerical occupations the number was 43 percent, and with workers 28 percent. (Kotila 2005)

## **2.7. Assessment and decision-making in employee selection**

This section reviews how organizations decide which candidates to hire and which to reject during the employee selection process. Even if the selection methods themselves can show good predictive validity and provide great predictions of the applicant's future job performance, the decision-making phase may cause problems to the overall efficiency of the selection process. Difficulties and problems occur when assessors conduct the final hiring decision in suboptimal ways, for example under circumstances of information overload and time pressure, when there are too few applicants to choose from or when the quality of the applicants is poor. (Born & Scholarios 2005)

Decision-making in employee selection is viewed here as the process or stage in which the assessor makes a decision to hire or reject the applicant based on all information that is gathered with the selection methods. The assessor's decision-making is partly subjective, thus cognitive and motivational factors may have a biased effect on it. Understanding these micro-level issues that cause bias is important in order to minimize subjectivity. (Born & Scholarios 2005)

Usually the selection process consists of several different selection methods that measure multiple different criteria. Some standardized methods, such as cognitive ability test and per-

sonality tests, do not need an assessor, and it is easy to rank applicants objectively. However, ranking for example interviews or assessment centers results is more challenging, since unlike in standardized tests, there is not only one right answer, and subjectivity is always present. In addition, interpreting and combining scores of multiple different methods may be challenging. (Born & Scholarios 2005, p.268)

According to Born and Scholarios (2005), the employee selection process has three different decision-making stages that are described in the table 2.4. Assessor rating errors and holistic and mechanical decision-making approaches are reviewed in the following sections.

*Table 2.4: Decision-making stages in employee selection (Born & Scholarios 2005, p.272)*

<b>1</b>	<b>Ratings of assessors</b>	The first stage handles how assessors process information when they are rating applicants. All selection methods that involve assessor ratings are somewhat subjective, thus prone to rating errors. It is important to understand possible biases and errors in order to make good decisions. Assessor rating errors are discussed in more details later.
<b>2</b>	<b>Combining information</b>	Will the information be combined with clinical (also referred as subjective, holistic or judgmental) methods or with statistical (also known as mechanical) methods? Both clinical and mechanical methods are reviewed in the later section.
<b>3</b>	<b>Hiring decision</b>	<p>At this stage, the actual decision is done. The stage consists of two elements: whether the company decides to hire the applicant or not, and whether the applicant's job performance is in reality successful or not. This leads to a fourfold table of false negative, true positive, true negative, and false positive. The quality of the decision, or the success ratio, has two possible definitions. The first definition (number 1. below) is the number of true positives divided by the number of all hired applicants, and the second (2.) description is the number of true outcomes divided by all outcomes. The first definition means that the process may exclude qualified applicants, but still have a high accuracy and quality according to the percentage.</p> <p><b>1. Quality of decision (considering hired people only) [%]</b>  <math>= \text{number of true positives} / \text{number of all hired applicants}</math></p> <p><b>2. Quality of decision (considering all outcomes) [%]</b>  <math>= \text{number of true outcomes} / \text{number of all outcomes}</math></p>

### 2.7.1. Assessor rating errors in rater-based assessment

Raters and assessors do not always provide accurate estimations, since humans are prone to make unconscious rating errors. Rating errors are also referred as rating distortions, since some of the errors are for example systematic distortions, and not necessarily errors as such. Rating errors in a general sense are inaccuracies in ratings caused by random, unsystematic, intentional and or systematic errors or distortions. (Cascio & Aguinis 2005, p.96; Landy & Conte 2013, p.223) However, many managers might not view the behaviors that cause rating errors as errors at all (Cascio & Aguinis 2005, p.96). In addition to the rating errors, rater-based assessment is also suffering from low interrater reliability, which has been found to

take place even when the same performance is viewed by different raters (Gingerich et al. 2011).

The most common rating errors are central tendency error, leniency and severity errors, similar-to-me error, and halo error, which is usually called the halo effect (Cascio & Aguinis 2005, p.96; Landy & Conte 2013, p.223)). A long list of cognitive biases can be found for example from Wikipedia (Anon 2017).

In employee selection, one of the most important errors is the halo error. According to Landy and Conte (2013), halo error is a rater's tendency to rate the same rating to an applicant on a series of dimensions, creating a negative or a positive halo effect that makes the applicant's all ratings similar. For example, if the assessor gets a positive feeling from the first dimensions that are being rated, the assessor might rate the rest of the dimension also positively, even though the applicant's performance is in reality poor. The halo error might be a result for example from a "unitary view", simple laziness or from overvaluing a single dimension, meaning that the rater believes that this one key dimension makes all other dimensions good. The "unitary view" refers to a belief that people are either good or bad performers due to a general performance factor. (Landy & Conte 2013, p.223) Some studies suggest that the magnitude of the halo error depends on whether the rater has a positive or negative feeling towards the ratees. Tsui and Barry found (1986) the greatest error when the halo was negative, second greatest when the halo was positive, and the smallest halo was found when the assessors had neutral feelings towards the ratees.

The central tendency error refers to the tendency of raters to choose the middle point on the scale when assessing applicant's performance, even if the performance would be better described by a more extreme point. An example would be that a rater is consistently rating answers as 3 from a scale from 1 to 5. The rater is "playing it safe" and not choosing an extreme point on the score. (Landy & Conte 2013, p.223) The negative effect of central tendency error is that the ratings do not discriminate between people, making the ratings useless in the selection process. One way to minimize the error is to have specific anchors, and highlighting what the anchors mean. (Cascio & Aguinis 2005, p.96)

Leniency and severity errors refer to biases where the rater either rates consistently high or low ratings. A rater who gives easily high scores falls to the leniency error, while a rater who assigns low ratings is affected by the severity error. Like in the central tendency error, the ratings do not discriminate between people, and decision-making becomes more difficult. A way to reduce leniency and severity errors is to have clear anchors for the rating scales. (Cascio & Aguinis 2005, p.96; Landy & Conte 2013, p.223)

Similar-to-me error refers to a bias where the assessor rates the applicant more positively if the applicant has similar attributes than the assessor. These attributes may include for example age, race and attitudinal characteristics. (Sears & Rowe 2003) For example Rand and Wexley (1975) and Sears and Rowe (2003) have demonstrated this effect in employee selection. The results of Rand and Wexley (1975) indicated that if the applicant and the interviewer had sim-

ilar biographical backgrounds, the applicant received higher ratings. As practical implications the researchers suggested that interviewers with high racial prejudice should be excluded, and that the interviewers should be prevented from viewing the applicant's biographical background information.

### **2.7.2. Holistic and mechanical decision-making approaches for combining information**

Like discussed in table 2.4, information is usually combined either with subjective methods or with mechanical methods. The subjective methods are also referred as holistic or clinical methods, and they usually contain some subjectivity and intuition. Mechanical decision-making, on the other hand, refers to methods that use mathematical and or statistical approaches to define the best possible decision. (Born & Scholarios 2005, p.272) The mechanical approach is sometimes also referred as analytical approach (e.g. Highhouse & Kostek 2013). The following sections will discuss the holistic or clinical approach and the mechanical approach in more details.

#### **The holistic decision-making approach**

One way of integrating data is to use a holistic approach, which is also known as the clinical approach (Kuncel et al. 2013). The holistic approach assumes that, with the help of a clinician's expert intuition, the best way to understand the applicant's performance is to look at the whole person and the way his or her attributes interact. According to the holistic approach the standardized tests cannot understand the whole due to their limited and narrow view of a person. (Highhouse & Kostek 2013) Thus, the clinician makes an overall judgment of the applicant's predicted job success by looking at interview ratings, test scores, and biographical data (Born & Scholarios 2005, p.272). However, research shows that the holistic approach is not as valid as the mechanical approach for data integration (Highhouse & Kostek 2013). Highhouse and Kostek (2013) found only one study that supported the holistic assessment in employee selection. On the other hand, in seven studies the holistic and mechanical approaches performed equally well, and five studies favored clearly a mechanical approach.

Similarly, Grove et al. (2000) conducted a meta-analysis that compared the mechanical and clinical decision-making strategies. The 136 studies that were analyzed predicted different kind of outcomes, such as psychiatric diagnosis or business success, and the result was that mechanical prediction was superior to the clinical method regardless of the predicted criteria. However, it is noteworthy to mention two interesting points about the study. Firstly, the clinical method was found out to be comparable to the mechanical method in approximately half of the studies. Secondly, the clinicians' predictions were considerably outperformed by the mechanical method if the clinicians had access to interview data. (Grove et al. 2000) In general, the reason why clinical methods provide less accurate prediction lies in rater errors that were discussed in the previous chapter (Born & Scholarios 2005, p.272). Nevertheless, the holistic or clinical approach for decision-making and combining information is by no doubt



more commonly used in employee selection than the mechanical approach (Born & Scholarios 2005, p.272).

### **Mechanical decision-making methods**

The mechanical or statistical decision-making approach uses statistical techniques, such as multiple regression analysis, or multiple-criteria decision-making models like analytic hierarchy process, that combine mathematics, hierarchies and psychology (Born & Scholarios 2005; Saaty 2013). The common factor for these methods is that they aim for objectivity, leaving no or little room for the rater biases.

When using statistical methods, interview ratings, test scores and biographical data are combined with mathematical formulas in order to predict the applicant's job success. (Born & Scholarios 2005) One method that is used in employee selection is the multiple regression analysis. It uses a mathematical formula that predicts the desired variable with two or more other variables. In order to use multiple regression analysis, the organization needs to have access to both predictor and criterion data, which means that job performance measures need to be available. The method compares the applicants' scores to the previously collected data, which can be a part of a large database or collected from the organization's current employees. (Landy & Conte 2013, p.259)

Another mechanical decision-making method that is used in employee selection is multiple-criteria decision-making (MCDM). In general, MCDM models are used in complex situation where the decision maker has to make a decision based on multiple alternatives (Dyer et al. 1992). Some examples of MCDM models that are used in employee selection settings are analytical hierarchy process (AHP) (e.g. Saaty 2013), analytic network process (ANP) (Dağdeviren 2010), simple additive weighting method (SAW) (Afshari et al. 2010), the technique for the order of prioritization by similarity to ideal solution (TOPSIS) (Dağdeviren 2010), and the fuzzy models (Golec & Kahya 2007/2). Afshari et al. (2010) used the SAW method to solve a personnel selection problem, while Dağdeviren (2010) provides an example of how to use ANP and TOPSIS to support the employee selection process of a manufacturing company. In addition, Golec and Kahya (2007/2) have created an employee selection process using a fuzzy model in order to minimize the subjectivity in the process.

One commonly used MCDM model is the AHP that was created by Thomas Saaty. For example Green Bay Packers, an American football team playing in the National Football League (NFL), used AHP for selecting their players before their victorious season in 2011. Baseball and ice hockey teams have also been reported to use the method<sup>9</sup>. (Saaty 2013) In addition, for example Chang et al. (2013) have designed a decision support model for employee selection that utilizes AHP and ANP. AHP is a comparatively simple construct that can be used by both groups and individuals. AHP provides a framework that uses hierarchy and pairwise comparisons for deriving relative measures, and it helps the decisions makers to model the

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<sup>9</sup> A very clear example of AHP applied in employee selection can be accessed here [https://en.wikipedia.org/wiki/Analytic\\_hierarchy\\_process\\_%E2%80%93\\_leader\\_example](https://en.wikipedia.org/wiki/Analytic_hierarchy_process_%E2%80%93_leader_example)

problem and provides alternatives on how to reach the goal. (Saaty 2013; Saaty 1990) However, not all agree with the usefulness of AHP. Stewart (1992) state that even though the rankings AHP provides may be useful, the method has to be used with caution and applied with the help of a skilled facilitator.

### **2.7.3. Subjectivity and objectivity in employee selection**

Merriam-Webster dictionary defines objectivity as

*“a: Expressing or dealing with facts or conditions as perceived without distortion by personal feelings, prejudices, or interpretations objective art an objective history of the war an objective judgment*

*b of a test: Limited to choices of fixed alternatives and reducing subjective factors to a minimum. Each question on the objective test requires the selection of the correct answer from among several choices.” (Merriam-Webster n.d.)*

On the other hand, subjective in terms of judgment is defined as

*“Peculiar to a particular individual: personal subjective judgments (2): modified or affected by personal views, experience, or background” (Merriam-Webster n.d.)*

Whenever there is a human involved in the assessment, the decision is at least in some degree subjective. (Born & Scholarios 2005, p.272). According to Highhouse (2008) hiring managers rely heavily on intuition and selection practices like unstructured interviews and holistic assessment that are prone to subjective judgment. Like discussed in the previous section, in holistic assessment the “whole person” needs to be taken into account when assessing future success, and this can be conducted only by an expert. For example, college admissions, employers and also some psychologist who conduct executive and managerial assessments use holistic systems. (Highhouse & Kostek 2013)

However, the research does not support the use of subjectivity, intuition and “taking the whole into consideration”. According to Gingerich et al. (2011) *“Solutions targeting rater subjectivity have been largely unsuccessful.”* Also Miles and Sadler-Smith (2014) state that intuitive approaches in employee selection may generate less costs upfront, but the hiring managers do not understand the consequences and the potential longer-term costs of not using objective approaches. The researchers pointed that this was especially the case in smaller companies, and that one reason for this was that the use of assessment centers and pre-employment tests exceeded the resources of the small companies, thus explaining why managers choose the subjective approaches.

In addition, Highhouse (2008) argue that according to the data, the intuitive expertise and the belief that prediction of human behavior is enhanced through experience are myths. It has

been shown that the predictions of human behavior do not improve with experience: this was the case for example in occupations like judges, business planners, clinicians, parole boards, marketers, social workers and admission committees (Grove et al. 2000; Sherden 1998; Camerer & Johnson 1997; Dawes et al. 1989). Also Einhorn and Hogarth (1978) state that the research on decision-making and clinical judgments of both experts and non-experts show great lack of ability. Einhorn and Hogarth (1978) stated that the accuracy of clinicians' predictions did not necessarily improve with more experience, professional training or additional available information. Similarly Garb (1998) note that the clinical judgments of experienced psychologist improve only a little compared to psychology graduate students.

Highhouse (2002) summarizes that the principles of evidence-based practices do not support the subjective clinical or holistic approaches in selection decisions. Furthermore, like discussed in the interview chapter, it is shown that the more structured and test-like an interview is and the less room there is for intuition and subjectivity, the better the interview predicts the assessee's future job performance. (McDaniel et al. 1994) Similarly, assessment centers provide same results simply by calculating the average of the assessors' ratings than what is achieved with an assessors' conference, where the assessors meet to discuss the evaluations in order to reach a consensus (Bernardin et al. 1988). It seems that subjectivity, intuition and the holistic approach do not provide almost any value in selection decisions (Highhouse & Kostek 2013).

### **3. Materials and methods**

#### **3.1. Research design**

*“There are many reasons for choosing to do qualitative research, but perhaps the most important is the desire to step beyond the known and enter into the world of participants, to see the world from their perspective and in doing so make discoveries that will contribute to the development of empirical knowledge.” (Corbin & Strauss 2008)*

This study uses a qualitative research approach for three reasons. Firstly, Koskinen et al. (2005) point out that qualitative research is a suitable method when the ideas and the outcomes of the research are applied by structuring or solving a practical issue of business management, and when the aim is to provide a framework that helps to structure and control the situation. The aim of this study is to provide a framework of an employee selection process that SMEs’ could benefit from, which is well in line with Koskinen’s (2005) view.

Secondly, according to Strauss and Corbin (1990), the researcher’s preferences and experiences are valid reasons for choosing a qualitative research approach. The author’s personal preference was to use a qualitative research approach due to previous experience in the field, and also because qualitative research gives the researcher flexibility.

Lastly, and maybe most importantly, like Corbin and Strauss (2008) pointed out in the quotation above, in qualitative research the researcher can try to see the world from the participants’ perspective. It is important that this research aims to see the employee selection process through the eyes of SMEs and interviewed informants. This viewpoint helps to discover the SMEs’ specific needs, issues and best practices, thus assisting the development of the employee selection process framework.

#### **3.2. Data**

The data were collected by interviewing experts from three SMEs, an HR manager from one global top tier management consulting company, and four psychologists working in the field of employee selection. The next chapters will describe the selection criteria for the interviewees, and also present short anonymous descriptions.

##### **3.2.1. Selection criteria for the interviewees**

The companies and other employee selection specialists were selected based on the scope of the study. The most important criterion was that the interviewees in the companies should be responsible or closely tight to the organization’s employee selection process. Secondly, the organizations should preferably be SMEs. However, the aim was to involve at least one large organization in this study, which has extensive resources and has studied employee selection elaborately. The hypothesis was that this kind of large company is able to provide insight that

SMEs could benefit from. Due to this, multinational consulting companies that are known to have elaborate employee selection processes were targeted.

A high rank in the Great Place to Work® (GPTW) competition was also considered as an advantage for the companies. The reason for this is tripartite. Firstly, according to the GPTW organization, the 100 Best Companies to Work For® have achieved nearly 3 times better stock market returns than their industry peers during the last 20 years. Secondly, employees at the 100 best companies are more likely to stay: these companies experience roughly one half of the voluntary turnover compared to their peers in the same industry. (Rohman 2016) Lastly, as one part of the evaluation that leads to the final GPTW ranking, the companies and their HR practices are audited. Due to this, the companies should have a motive to develop their employee selection process, which is one part of their HR practices.

Besides companies, also psychologist working in the field of employee selection were targeted. The criteria for the psychologist were extensive experience and background either from work life such as headhunting or from the research side.

### **3.2.2. The interviewed experts**

Four companies and four psychologists were contacted. They all responded positively and were willing to participate in the study. All the interviewees and the companies they represent will remain anonymous. Short descriptions are provided below in table 3.1.

*Table 3.1: The interviewees and the companies they represent.*

Inter- viewee	Background
1	A Finnish high growth SME working in the ICT sector and employing around 100 people. The interviewee is the head of human resources in the company, thus participating in most of the recruitments and being responsible for the continuous development of the company's employee selection process. The interviewee holds a master's degree.
2	A rapidly growing Finnish SME working in the ICT sector and employing around 300 people. The interviewee works in the human resources department and participates in all recruitments. The interviewee holds a master's degree. The company has a reputation for being an excellent workplace.
3	A Finnish SME working in the ICT sector and employing around 30 employees. The company has a reputation for being an excellent workplace. The CEO of the company, who is participating in all recruitments, provided a detailed document describing the company's employee selection process. <sup>10</sup> The interviewee holds a master's degree.
4	A globally operating top tier management consulting company with thousands of employees. The interviewee is a human resources manager in Finland and participates in all recruitments. The interviewee holds a master's degree.
5	Certified psychologist who holds a master's degree in psychology. Serial entrepreneur, who conducts individual psychological assessments for companies that need help in their employee selection. Besides being a psychologist, the interviewee understands the limitations of SMEs due to his background as an entrepreneur.
6	Certified psychologist who holds a master's degree in psychology. The interviewee is the founder of a headhunting company that is based in Finland. The interviewee has over 30 years of experience in recruitment and employee selection.
7	Has acted as an adjunct professor. Currently offers recruitment and employee selection services.
8	Professor of psychology in a Finnish university. Has been researching topics that are very closely related to employee selection.

### 3.3. Data collection

This chapter describes the study and interview settings and the data collection method that was used. Also, the interview process and the rationalization for using theme interviews are presented. In addition to interviews, the plan was to use a selection plan matrix as a secondary method for data collection. The matrix, which can be seen in Appendix 2, would have ensured a possibility for triangulation of data collection methods. Unfortunately, only a few interviewees submitted the matrix, and the data were not used in this study. Presumably, the busy professional did not have time to fill in the matrix.

#### 3.3.1. Theme interview method

The empirical research was conducted as semi-structured theme interviews. According to Hirsjärvi and Hurme (2008), predefined themes guide the theme interviews. All themes should be discussed with all interviewees, but there is also space for discussion that is not related to the themes. (Hirsjärvi & Hurme 2008) Theme interview is a suitable method if the research topic is not very well known or defined, the researcher cannot know all possible answers in beforehand, and if the researcher wishes to keep the possibility to ask probing ques-

<sup>10</sup> In the end, the CEO of company 3 was not interviewed. However, the CEO provided a comprehensive document, which describes the company's employee selection process very elaborately. This document answered directly to most of the interview questions.

tions from interviewees that are subject-matter experts in their own specific fields (Routio 2005). Also, Hirsjärvi and Hurme (2008, p.35) add that interviews work well if the researcher knows or expects in beforehand that the research topic might produce complex answers that point to multiple directions.

Next, the use of the theme interview method is rationalized. One important aspect why theme interviews were used is the lack of similar previous research. There is a lot of research that focuses on individual employee selection methods, such as McDaniel's et al. (1994) comprehensive meta-analysis on interviews or Tett's and Christiansen's (2007) study on personality tests. In addition, some studies combine different methods. For example Schmidt and Hunter (1998) studied 19 different employee selection procedures and how combinations of the procedures predict future job performance. However, these studies are mostly conducted in North America, and they are all missing the perspective of SMEs, which are struggling with low resources. Even more importantly, none of the studies try to propose even a rough process that would guide the SMEs all the way from the criteria selection to the final hiring decision.

Another reason for using a theme interview was that the previous research is not always unanimous: as an example, Morgeson et al. (2007) question if personality tests should be used during the employee selection process, but at the same time Tett and Christiansen (2007) argue that personality tests are a valid method to use in employee selection.

From this perspective, and compared to the framework that Hirsjärvi and Hurme (2008) and Routio (2005) provided above, the theme interview method is a logical choice: due to the lack of similar previous research, the interviewees will most likely bring up topics that the researcher cannot predict in beforehand. Also, since the existing research is partly conflicting, it is expected that the interviews will produce answers that point to multiple directions. Finally, since the interviewees represent SMEs, psychologists, headhunters, academics and a large consulting company, they are subject-matter experts in slightly different fields, and the author wanted to be able to ask different probing questions from different interviewees.

### **3.3.2. The interview settings**

The interviews had six themes, (1) general questions focusing on employee selection in SMEs, (2) selection criteria, (3) screen out stage, (4) screen in stage, (5) tests in the employee selection process and (6) grading, decision-making and validity. These themes were chosen based on previous research on employee selection (Berry 2003; Hough & Oswald 2000; Schneider & Schechter 1991; Born & Scholarios 2005; Roe 2005). Also, the interviewer had predefined facilitating questions for all themes to help to focus and guide the discussion. However, the interviewees did not need to strictly answer only to these guiding questions: in contrary, the interviewees were encouraged to speak openly. The themes and the questions were emailed in beforehand to the interviewees. This ensured that the interviewee could prepare for the interview themes, and the actual interview could focus on "why" and "how" types of questions. The theme interview structure can be found from Appendix 3.

The interviews took approximately one hour, with the longest one lasting two and a half hours due to the interviewee's enthusiasm on the topic. Time for open discussion was reserved in the end of each interview. All interviews were conducted during fall 2016, and they were audio recorded. The interviewer wrote notes during the interview. In addition, comprehensive notes and transcripts based on the audio recordings were written maximum one week after the actual interview.

### **3.4. Data analysis**

The data were analyzed with an abductive perspective. According to Tuomi and Sarajärvi (2009, p.97), the abductive perspective combines both theory and empirical materials as a starting point for the analysis. The researcher's thoughts are guided both by the empirical evidence and existing constructs, and the researcher aims to combine these. The analysis is not directly based on theory, but links to the theory can be seen. The empirical evidence can be collected with different methods, interviews being one of them. (Tuomi & Sarajärvi 2009, p.97) Lastly, when using an abductive perspective for analysis, the researcher can also point out that the empirical evidence do not correlate with the existing research (Eskola 2001).

Thematic analysis was applied to the data, since it is a natural analysis method when analyzing data from theme interviews (Saaranen-Kauppinen & Puusniekka 2006). Thematic analysis is also a suitable method when the research is trying to solve a practical issue (Eskola & Suoranta 2000, pp.174–180), which is the case in this study. Themes that are discussed with the interviewees are usually found from all interview notes, and the data can be sorted according to these themes. The themes used in the analysis might resemble the themes of the interviews, but this is not mandatory. (Saaranen-Kauppinen & Puusniekka 2006) New themes might arise from the data, and interviewees might not follow strictly the themes and the structure planned by the researcher. (Hirsjärvi & Hurme 2008, p.173)

The themes that arise from the analysis are often based on the researcher's interpretation of the interviewees' answers: it is unlikely that two interviewees would use exactly the same words, thus the researcher has to code similar answers to same categories. (Hirsjärvi & Hurme 2008, p.173) In addition, coding or quantification can be used for creating themes (Saaranen-Kauppinen & Puusniekka 2006).

The analysis process followed a step-by-step approach provided by Braun and Clarke (2006). Next, the steps of the analysis process will be explained.

#### **Step 1: Familiarizing with the data**

The purpose of the first phase is that the author becomes fully familiar with the data by reading and re-reading the interview notes and transcriptions, and by listening to the recordings to ensure that the transcriptions match the audio records. Also, the author should start to look for patterns in the data. (Braun & Clarke 2006) The author carefully listened to the audio recordings and read through the interview notes and transcriptions. Emerging patterns were marked



in Microsoft Word documents by color coding and comments.

## **Step 2: Generating initial codes**

During the second step, the initial codes are created by identifying patterns from the data. A code represents a basic segment or element of the raw data, which the author finds interesting. Codes are usually more specific and narrow than the actual final themes. (Braun & Clarke 2006) The codes were created with a “theory-driven” approach. According to Braun and Clarke (2006), in a theory-driven approach the author might have specific questions in mind that he or she wishes to code around. In this study, the codes emerged partly through the previous research, and partly from the data. Codes were marked in the Microsoft Word documents by inserting comments and listed in a Microsoft Excel spreadsheet.

## **Step 3: Searching for themes**

The third step aims to sort the listed codes into potential themes and sub-themes. The codes and the relationships between the codes are analyzed in order to combine the codes into broader overarching themes. (Braun & Clarke 2006) The essential coded quotes from the Microsoft Word files were copied, pasted and categorized in a Microsoft Excel spreadsheet. Similar or overlapping codes were placed next to each other. In the end, potential themes (table 3.2) could be identified from the clustered codes.

*Table 3.2: First categorization*

Employee selection process
Issues and challenges
The selection criteria
Screen out stage
Screen in stage
Interviews
Pre-employment testing
Decision-making
Grading and/or evaluation of applicants

## **Step 4: Reviewing the themes**

According to Braun and Clarke (2006), step 4 involves two levels. First, the author needs to read all the collected and coded extracts of each theme to ensure that they form a coherent pattern. Secondly, the author re-reads the whole data set to review that the themes accurately work in relation to the data set as a whole. The end goal of this step is to have a good idea of how the different themes work alone and together. (Braun & Clarke 2006)

The data set was re-read by the author according to Braun’s and Clarke’s (2006) instructions. During the process, it became evident that some restructuring of themes needs to be conducted, and this lead to two mergers. First, themes ‘*Employee selection process*’ and ‘*Issues and challenges*’ were combined to form a theme ‘*Characteristics of employee selection processes in SMEs*’. Secondly, ‘*Grading and/or evaluation of applicants*’ was merged into ‘*Decision-*

*making*'. At the same time, the theme "*The selection criteria*" was changed to "*Defining requirements*", which describes better the phase and includes both job analysis and selection criteria. The end result may be seen in the table 3.3 below.

*Table 3.3: Second categorization*

Characteristics of employee selection processes in SMEs
Defining requirements
Screen out stage
Screen in stage
Pre-employment testing
Decision-making

### **Step 5: Defining and naming themes**

The themes need to be further refined and defined in this stage in order to capture the essence of each theme. Also, the aspects of the data that each of the themes capture needs to be determined to ensure that there is not too much overlap between the themes. An analysis needs to be written from every theme. Lastly, relationship to research questions may be studied. (Braun & Clarke 2006) Short analyses of each theme were written, and the themes were compared to the research questions and objectives. Although the theme '*Pre-employment testing*' could be included in the '*Screen in stage*', it was decided to be left as an individual theme since it matched research question four, and since it is an interesting topic that generated a lot of discussion with the interviewees.

At this point, also some of the research questions were modified. The first research question, "*What employee selection methods are used*", seemed to be too narrow, thus it was changed to "*What kind of characteristics and methods describe the employee selection process of SME?*" Also, the original research question two "*What does the research say about the employee selection methods that are used?*" was deleted. To match better with the themes of the data analysis, research question "*What kind of features do screen out and screen in stages have?*" was added. The final research questions can be seen in section 1.2.

### **Step 6: Producing the report**

The last step involves writing the actual report. (Braun & Clarke 2006) Results and final themes are presented in chapter 4. Real quotes are presented to provide the essence of the point being demonstrated.

## **4. Results**

The results of the empirical research are presented in this chapter. The findings are introduced anonymously and in details, and arranged according to the research questions. Research question three is divided into two chapters, since it is logical to discuss the screen in and the screen out stages separately.

The chapter starts by describing the characteristics of the employee selection process, moving then to the defining requirements, screen out, and screen in stages, and finally revealing evidence related to pre-employment testing and decision-making in SMEs. Within various interesting subthemes, statements of all interviewees are presented in tables to illustrate the experts' answers and opinions. This allows an easy comparison of the statements for the reader.

### **4.1. The characteristics of the employee selection processes in SMEs**

This chapter summarizes the characteristics and the structure of the employee selection processes that the interviewees are using in their current companies, or in the case of psychologists, the processes they would use if they were responsible for employee selection in an SME. In addition, the main issues that SMEs are facing during the employee selection process are presented hereafter. The chapter also reveals whether the SMEs should have an in-house or outsourced employee selection process, and how the applicant's perspective is linked to the company's perspective.

#### **4.1.1. The employee selection process and methods used**

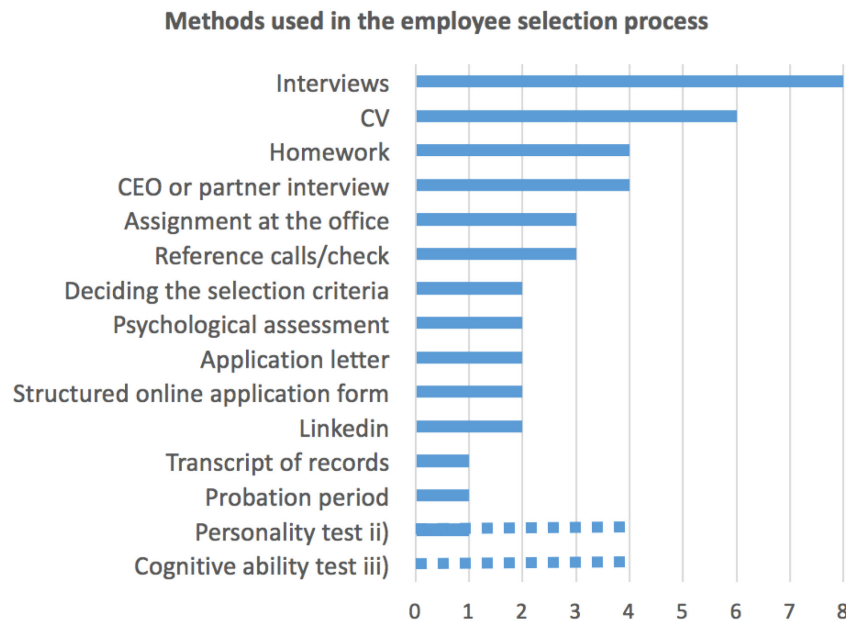
The employee selection processes reported by the interviewees can be seen in table 4.1. On the other hand, figure 4.1 summarizes how many of the interviewees use certain methods in their process. The aim of this section is to give an overview of the processes that are used in other SMEs. The individual methods and their characteristics are discussed in more details later.

The most commonly used method was interviews, which were included in all employee selection processes. Three interviewees reported that they use structured interviews, two use a semi-structured approach, and one interviewee use only unstructured interviews. Two companies reported that they use both semi- and unstructured interviews.

*Table 4.1: Employee selection process and methods used*

Inter- Process and methods viewee	
1	<ol style="list-style-type: none"> <li>1. Background check (CV, LinkedIn)</li> <li>2. Homework</li> <li>3. 1st semi-structured interview and assignment</li> <li>4. 2nd semi-structured interview and assignment</li> <li>5. Meeting the team and CEO</li> </ol>
2	<ol style="list-style-type: none"> <li>1. CV: Work experience (HR)</li> <li>2. CV: Skills and capabilities check (Team)</li> <li>3. Semi-structured cultural interview (HR)</li> <li>4. Homework</li> <li>5. Semi-structured Interview and assignment</li> <li>6. Semi- / unstructured interview (CEO)</li> </ol>
3	<ol style="list-style-type: none"> <li>1. CV and application letter</li> <li>2. Unstructured interview</li> <li>3. Background check and reference check call(s)</li> <li>4. Unstructured interview (CEO)</li> <li>5. Individual psychological assessment (personality test and interview by a psychologist)</li> <li>6. Unstructured team interview</li> </ol>
4	<ol style="list-style-type: none"> <li>1. CV, application letter and transcript of records</li> <li>2. 1st structured interview and assignment (interviewer 1)</li> <li>3. 2nd structured interview and assignment (interviewer 2)</li> <li>4. Feedback phone call</li> <li>5. 3rd structured interview and assignment (interviewer 3)</li> <li>6. 4th structured interview and assignment (interviewer 4)</li> </ol> <p>Additionally, European main office uses cognitive ability tests.</p>
5	<ol style="list-style-type: none"> <li>1. Deciding the selection criteria with the supervisor</li> <li>2. Planning the employee selection process</li> <li>3. CV or LinkedIn</li> <li>4. Semi-structured interview</li> <li>5. Homework (might include cognitive ability or personality tests)</li> <li>6. Individual psychological assessment (might include a personality test)</li> </ol>
6	<ol style="list-style-type: none"> <li>1. CV</li> <li>2. Homework</li> <li>3. Semi-structured interview</li> <li>4. Background check and reference check calls or meetings</li> <li>5. Possibly cognitive ability or personality tests for the last 1-3 applicants</li> </ol>
7	<ol style="list-style-type: none"> <li>1. Deciding the selection criteria</li> <li>2. Online application form</li> <li>3. 1st structured interview</li> <li>4. 2nd structured interview</li> <li>5. In some cases a personality test</li> </ol>
8	<ol style="list-style-type: none"> <li>1. Structured online application form</li> <li>2. Comprehensive structured interview(s)</li> <li>3. Reference check calls</li> <li>4. Cognitive ability tests (with some considerations)</li> <li>5. Probation period</li> </ol>

The second most commonly used method was reading CVs that the applicants submit. This was used by six interviewees, and all of them used CV as one of the first steps in the process. Thirdly, four interviewees stated that they use some sort of homework in their process, which make homework the third most widely used method in this study. In all the cases the homework was closely related to the actual open job. Also, an interview by CEO or partner was used by four informants.



*Figure 4.1: Methods used in the employee selection process. The dotted line means that the method might be used depending on the job.*

Reference calls, in other words calling former employers or coworkers, was the fourth most used method. Three interviewees reported that they use this method in their employee selection process. Similarly, three interviewees reported that their process includes job related assignments that the applicants solve at the office during an interview. These assignments included for example problem solving, presentations and software development tasks.

Two interviewees used structured online forms instead of CVs in the beginning of the process. In addition, two persons reported that the first step of the process is deciding the selection criteria. Lastly, two interviewees said they use application letters in their process.

The above-mentioned methods were used in practice in all recruitments regardless of the job. However, the usage of personality and cognitive ability tests varied depending on the job in question. Only interviewee 3 reported that the company uses personality tests in all of their recruitments. However, three interviewees pointed out that depending on the job and selection criteria, personality tests might be used in the process. Similarly, two persons reported that they might use cognitive ability tests in the process if cognitive ability is an important criterion in that specific job. Also, even though cognitive ability tests were not used in Finland, the global consulting company uses cognitive ability tests at their European main office due to the great number of high-level applicants, which makes decision-making difficult. Interviewee 8

reported that cognitive ability tests would be a part of the employee selection process if the interviewee designed an employee selection process for an SME. However, the test results would not be used in decision-making during the first five years. During that initial time, the results are tracked and compared to the hired personnel's actual job performance, and only after the five years are the test results used in decision-making.

The interviewees were also asked if all applicants have to go through the same process. Six interviewees answered to this question, and they all reported that the process is the same within one open job. However, since only three interviewees are using structured interviews, all the interview questions in the semi- and unstructured interviews are not necessarily the same, even though the themes of the interviews remain the same.

Lastly, interviewees 1, 5 and 6 mentioned that assessing same criteria with different methods is important. Regarding this, interviewees 1 and 6 also commented that developing a selection plan matrix would be beneficial for the SMEs. An example of the selection plan matrix can be seen in Appendix 2.

#### **4.1.2. The main challenges SMEs are facing**

Table 4.2 below summarizes the answers for the main challenges that SMEs are facing in employee selection. Two of the companies have an internal rule that they need to give an answer to all the applicants in a relatively short time, and due to the lack of resources, holding that promise is sometimes challenging. Two interviewees also mentioned that unsuccessful hiring decisions have a major effect on the company, and handling these unsuccessful hires require a lot of time and resources. SMEs with small teams cannot bear the total costs of poor recruitments: the cost is not only monetary, since an unsuccessful hire can also poison the company culture.

Interviewee 5 stated that the main problem of employee selection in SMEs is that the best performers are not actively looking for a job. Therefore, in his opinion, the company's perspective and the applicant's perspective cannot be separated. On the other hand, interviewee 7 pondered that the most critical problem is the insufficient preparations before the actual selection process. The interviewee reported that SMEs are often in a hurry, and that the companies might just quickly jump over the phase where the actual selection criteria should be carefully decided. This generates problems in the later stages of the process.

*“In a hurry, the (job) analysis is forgotten, and companies end up using empty slogans like ‘Let’s take someone who is as flexible as possible’, which does not tell anything. The (job) analysis phase is also the most critical challenge for headhunters and (recruitment) consultants: What does the company ACTUALLY need?” [Interviewee 7]*

Table 4.2: Main issues SMEs are facing

Inter-viewee	What are the main issues that SMEs are facing during the employee selection process?
1	Companies use 20 percent of the time for recruitment and employee selection, and 80 percent of the time for dealing with unsuccessful hiring decisions.
2	Answering to all applicants in the promised timeframe.
3	Answering to all applicants in the promised timeframe.
4	Firstly, having limited resources during the employee selection process. Secondly, the effect of an unsuccessful hiring decision.
5	Best performers are not actively looking for a job. How do SMEs find them?
6	Should the SME have their own employee selection process or utilize headhunters? Related to this, which one is affecting more: the attraction and pull to the new job, or the push away from the old or current job?
7	Evaluating the requirements of the job and deciding the selection criteria before the actual process even starts. SMEs are often in a hurry, and hiring managers do not focus enough on this phase. This phase is also the most critical phase for headhunters.
8	This topic was not discussed during the interview.

#### 4.1.3. In-house or outsourcing?

Interviewees 5, 6 and 7 all raised up the topic whether SMEs should have an own employee selection process, or should they outsource it. Interviewee 5 saw that in the future people are not looking for jobs, but jobs are looking for suitable people. He envisioned that there is going to be apps that match jobs and people with relevant skill set. Interviewee 5 continued that even today the best performers are not searching for jobs: they have to be headhunted.

Interviewee 6 pondered that SMEs need to make an important principled decision: to use seine or lure fishing:

*“Should SMEs use seine or lure fishing? With seine fishing, in other words with job ads and company’s own recruitment and selection process, the company might get a lot of applicants, but what is the main reason for the applicant to apply: pull to the new job or push away from the old one? In lure fishing (headhunting), there might be more pull to the new job, since the applicant is usually doing well in his or her old job.” [Interviewee 6]*

Almost identically, interviewee 7 stated that the main decision SMEs need to make is whether to create an own selection process or outsource everything. Interviewee 7 gave an example: a small importing company that is recruiting rarely might not want to invest in HR, and their salespeople might not have time and skills to master the employee selection process. In this case, outsourcing the whole process as a turnkey solution could be a good idea.

In the end, both interviewees 6 and 7 concluded that in any case, the SMEs should have the capability to perform the employee selection process without external help.

*“SMEs should master the employee selection process. It is cheaper and also a critical decision: are the consulting companies passionately pursuing the best interest of the SME?” [Interviewee 7]*

Interviewee 6 stated that the best way is to combine the SME's own employee selection process and headhunting. Interviewee 6 argued that in this way the company can have its own selection process ongoing while the headhunter can contact people that would otherwise not apply, or who the company cannot find or contact itself. In some cases, it might be that it is not appropriate for the company to directly contact people in companies that operate in the same industry, but it is easier for the headhunter to make the call.

#### **4.1.4. Applicant's perspective vs. company's perspective**

Interviewee 5 argued that the applicant's perspective and company's perspective cannot be divided or viewed separately. Applicant's perspective means here things that are important for the applicant, and how the applicant views the employee selection process: for example, is the process easy, convenient and fast for the applicant, or is it time demanding, challenging and stressful. On the other hand, the company's perspective or the data acquisition perspective refers to things that make the employee selection process valid and ensure that the process finds the best applicants. These two perspectives are often conflicting: an extensive assessment, which is good from the company's perspective, might be viewed negatively from the applicant's perspective since it takes more time and makes the process more stressful.

One example of the conflicting perspectives has to do with CVs and application forms. Interviewee 5 commented that from the applicant's perspective probably the best way would be to use for example LinkedIn profiles, which would be analyzed by a machine that seeks for certain criteria from the profile. This would be very easy and convenient for the applicants, since they do not need to fill in any forms nor send separate CVs.

On the other hand, interviewee 5 said that from the company's perspective, or from the data acquisition perspective, the best solution would be to have standardized questions, for example in an application form, which the applicants then fill in. However, interviewee 5 argued that applications forms are time demanding and people might not apply for jobs that require filling in forms.

Also interviewee 2 stated that since there is a great competition of the top performers, the company does not want to make the process challenging for the applicants. On the contrary, the company wants to keep the process as easy and comfortable as possible. Interviewee 2 told that especially when recruiting software developers, it is very difficult to attract the top talents. There are so many companies recruiting software developers that it is crucial that the employee selection process is easy for the applicant. Companies cannot afford losing good applicants only because of a challenging or demanding employee selection process.



In conclusion, interviewee 5 had a strong opinion that the company's perspective cannot be separated from the applicant's perspective:

*"The problem is that the company never gets to choose from the best applicants if the employee selection process is not easy and convenient for the applicants. Company's perspective and applicant's perspective cannot be separated from each other." [Interviewee 5]*

## 4.2. Defining requirements

This section presents how the selection criteria are decided in the SMEs. Findings related to job and competence analysis are also introduced. Lastly, a few specific criteria were discussed with the interviewees, and the interviewee's opinions are presented in the end of this section.

### 4.2.1. Deciding the selection criteria

One topic in the interviews was the selection criteria that the interviewees are using in their employee selection processes. The interviewees were asked how they decide the criteria. Table 4.3 below presents the summarized answers for the question.

*Table 4.3: How should SMEs decide the selection criteria?*

Inter-viewee	How should SMEs decide the selection criteria?
1	This topic was not discussed during the interview.
2	Depending on what kind of skills and competencies are needed. The process starts from sales or projects, who inform the HR department. The teams give the specifications for (required) skills and knowledge, and HR for the cultural side.
3	The company has nine criteria that are measured throughout the selection process. The criteria include three values that are highly important for the company, a few personality traits, the applicant's know-how and person-culture fit.
4	The selection criteria do not need to be decided since they are the same in all recruitments. The main themes and criteria in all recruitments are problem solving skills, personal impact, leadership and entrepreneurial drive.
5	The criteria are selected based on a discussion with the manager or supervisor who is hiring. The supervisor has the knowledge of what kind of skills and competencies are needed. Selection criteria vary case by case, so each new type of recruitment use new selection criteria.
6	The selection criteria should be decided according to the company's long term strategy, not according to the person who left. The management team has the clearest vision of the strategy, thus should be involved in deciding the criteria.
7	The most relevant information regarding the job and its requirements come from the supervisor and from the team. Simplify the process, and choose three to four criteria that you use for decision-making.
8	What is relevant in the specific job? Choose concrete, measurable and valid criteria, and define a sufficient level for each one of the criteria that the applicants have to pass. If the applicant scores higher than that level, he or she has passed the hurdle.

Two interviewees reported that the selection criteria should be decided in collaboration with the supervisor or the manager who is hiring. Similarly, two interviewees stated that the team

that the applicant is joining should be involved when deciding the selection criteria. Interviewee 6 pointed out that the selection criteria should be decided so that they are in line with the company's long term strategy. Interviewee 6 continued that the management team has the clearest vision of the company's strategy, and due to this the management team should participate deciding the selection criteria.

*“The job and the task is often described based on the person who left the company or who is currently working there. However, this is too late: change is reality, and the company needs to prepare for it. In what kind of future is the applicant going to be working?” [Interviewee 6]*

Interviewee 8 underlined that regardless of the job, the selection criteria have to be concrete, measurable and valid.

*“The selection criteria that you measure has to be concrete. You need to know what you measure, and how you measure it.” [Interviewee 8]*

Interviewee 7 saw that almost all jobs and people can be divided according to few characteristics, and that these characteristics should be used as criteria in almost all recruitments. Table 4.4 summarizes these characteristics.

*Table 4.4: Selection criteria that interviewee 7 uses in almost all recruitments.*

Is the job and the person...	Example and/or definition
Quality or result oriented	Quality oriented people make flawless work, but result oriented people might produce double amount in the same time. The SME needs to decide which one is more important in the job.
Supporting current processes or creating new processes	For example, does the person see the world with a focused approach (trees) or abstractly (forest)? In many engineering jobs, seeing the trees and supporting current processes are important. However, in research and development jobs abstract approach and creating new processes is valuable.
Enjoying mobile or stable environment	An extreme example of stable environment is control room work in a factory, where people are typically “allergic” to deviations. On the other hand, a sales representative is a good example of mobile environment: the sales person likes to drive around Finland, meet customers in different places and situations, and deal with easy and difficult customers. The situation and the environment alters all the time.
Solving problems analytically and logically or intuitively and creatively	Intuitive people solve problems according to the specific situational characteristics. The world of sales is usually intuitive. On the other hand, analytical people solve problems logically and based on facts, and engineers represent typically this approach.

Lastly, interviewee 2 noted that there are a few factors that are important in all jobs. The first one is that the person needs to be excited about the job itself, for example programming, since the mundane life is mostly programming and the person has to enjoy it. Secondly, the person should be able to work with customers. Lastly, everyone at their company needs to develop themselves and their own skills.

#### 4.2.2. Job and competence analysis

The interviewees shared their best practices related to the job analysis<sup>11</sup> phase. Since SMEs have limited resources, interviewee 4 commented that it is not wise to start creating the job analysis process from the scratch. Other companies have solved the same problems before. A good method would be to benchmark how successful companies hire personnel and how they conduct job analysis.

*“If you are hiring someone who should execute and get things done, I would benchmark General Electrics. However, if you are recruiting a creative leader, then I would take a look how the best marketing agencies are recruiting.” [Interviewee 4]*

While interviewee 4 was referring above to the planning and development of the job analysis process, interviewee 5 talked more specifically about the concrete situation when an SME is actually conducting a job analysis. Interviewee 5 mentioned that whenever the company is recruiting a new type of employee, the job analysis should always start from the scratch. Also, one key takeaway that interviewee 5 highlighted was that even the supervisor or manager who is hiring might be wrong, and he or she might not understand how the future business environment is affecting the requirements and the selection criteria.

*“Usually the supervisor starts by telling a vague description of the job and of the skills that are needed. You must first start with open ended questions, trying to avoid leading the supervisor with your own opinions. Then try to focus and specify to get to concrete things. The more you assume, the more you are going to the wrong direction.” [Interviewee 5]*

Interviewee 7 commented that the term “job analysis” is in fact outdated. The interviewee suggested that a more topical term is competence analysis, and that companies that are nowadays developing their job analysis phase should preferably learn about competence analysis rather than from job analysis. In USA, job analysis is sometimes defined as a strict and detailed process. However, this study uses job analysis as a generic term.

*“The job analysis literature is still lagging somewhere in the 80s. Job analysis was not even smart in the 80s, since it is too detailed and might split the job into 50 different pieces.” [Interviewee 7]*

Interviewee 7 continued that the supervisor and the team has the best knowledge for the competence or job analysis. The interviewee also commented that the job analysis has to be done in a meeting with the supervisor, and a document or a form cannot replace the meeting. Also, both interviewees 7 and 8 had strong opinions that job analysis is probably the most important part of the whole employee selection process. The interviewees stated that if the job analysis

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<sup>11</sup> This study uses the term “job analysis” as a generic term that refers to the phase where the job is analyzed and the selection criteria are decided.

is conducted correctly, it helps enormously in the selection and assessment stages that come later in the employee selection process.

Lastly, interviewee 8 recommended that during the job analysis phase companies should analyze the actual job, decide what is measured, and most importantly, leave out all criteria that cannot be measured concretely.

*“The job analysis phase in the beginning (of the employee selection process) is the most important part! You need to analyze the job description, what is expected from the employee, how the selection criteria are assessed, and simply leave out those initial criteria that cannot be assessed objectively without a gut feeling. The process has to be as clear as possible in order to minimize the effect of the interviewer” [Interviewee 8]*

#### **4.2.3. General mental ability**

Interviewee 8 emphasized that general mental ability (GMA) predicts well future job performance, especially when the job or task is challenging. Also interviewees 5 and 6 mentioned that cognitive abilities are important selection criteria. Interviewee 5 stated that GMA correlates with job performance. Nevertheless, interviewee 5 continued that in every recruitment it is important to determine what are the actual requirements for the job, since general mental ability is not important in all jobs.

*“The more challenging the task is, or the more difficult it is to even define the task, the better general mental ability predicts future job performance.” [Interviewee 8]*

Interviewee 8 also clarified that cognitive abilities consist of multiple different aspects, such as information processing and the speed of information processing, ability to acquire new information, managing wholeness and understanding causality. These and other aspects all together are referred as general mental ability, which is a nonspecific capacity to solve problems, learn, and reason.

Interviewee 7 opposed testing cognitive abilities, but not general mental ability or intelligence as such. Interviewee 7's argument was that the general level of GMA and intelligence in Finland is so high that tests do not provide value. Interviewees 1, 2, 3 and 4 did not specifically comment GMA.

#### **4.2.4. Personality**

Interviewee 8 argued that SMEs should not use personality as a selection criterion. The interviewee stated that personality traits are abstractions, not facts, and that the traits are in fact covenanted, and dependable on time and environment. The interviewee gave a clarifying example: a child that is mid-active is described as being brisk (reipas in Finnish), a very active child is lively (vilkas), a too active child is restless (levoton), and the extreme end is ADHD.

We are all the time referring to the same trait - activity - but there is no clear line where the situation changes from good to bad.

Furthermore, interviewee 8 stated that it is a common myth that personality would predict behavior. Similarly, also interviewee 4 stated that the company believes it is more valid to assess current and past behavior than personality.

*“Personality does not predict behavior. This is a widespread illusion today. We think that a certain personality behaves in a certain way, but we cannot actually know how a person behaves or acts based on his or her personality... ... Past behavior predicts future behavior. The applicant will behave and act in a same way in the new job than he or she did in the previous job.” [Interviewee 8]*

Interviewees 3, 5, 6 and 7 saw that personality is a valid selection criterion. Interviewee 6 stated that personality could be used as a criterion, but that companies should not emphasize for example extraversion. Overvaluing extraversion might lead to a situation where quiet or not that outspoken applicants might be excluded, even though they would perform well in the job.

#### **4.2.5. Ability to learn, person-culture fit and values**

The interviewees were asked if they use the ability to learn, values, or person-culture fit as selection criteria, and how do they evaluate these criteria. This section will first start by discussing the ability to learn. Interviewee 1 used assignments that the applicants solve or prepare at home as a method for evaluating the applicant's ability to learn. In their employee selection process, the ability to learn fast was a selection criterion. On other hand, the other interviewees did not use ability to learn as a selection criterion. Interviewee 2 reported that they do not explicitly evaluate the ability to learn, but it is implicitly evaluated in the assignments. Interviewees 5 and 6 stated that the ability to learn might be implicitly evaluated with cognitive ability tests. Lastly, interviewee 8 commented that general mental ability predicts future job performance, and the ability to learn fast is one factor of general mental ability, thus learning fast is important. However, interviewee 8 did not specify that the ability to learn would be an individual selection criterion.

The findings related to the person-culture fit are presented next. Interviewee 1 stated that their company assesses person-culture fit during the interviews, and also when the team is spending time with the applicant. Applicants who pass the first stages of the process end up spending a lot of time with the team for example during lunches or when enjoying after work beers, which gives the team a great chance to assess the applicant's fit into the company culture. Also interviewee 2 commented that person-culture fit is evaluated in the employee selection process. The person-culture fit is tested both during the initial interview with HR and during the last interview with the CEO. Both interviewees 1 and 2 highlighted that person-culture fit is very important, and that a clear misfit means that the applicant is excluded from the selection process. Interviewee 3 stated that person-culture fit is assessed implicitly in the inter-

views and with the personality test, and explicitly in the team interview that is the last step of the selection process.

Lastly, only interviewee 3 reported that the company assesses values explicitly. Values were assessed throughout the selection process, especially in two interviews and with the personality test. On the other hand, interviewee 1 stated that since the applicants spend a lot of time with the team, values are in a way assessed, but values are not a concrete or specific selection criterion. Interviewee 8 commented that assessing values is problematic. According to interviewee 8, the correlation between values and the actual behavior is low, meaning that values do not predict behavior. It is easy for people to report noble values, but the actual behavior in the real life shows nothing about these values. Due to this, interviewee 8 suggested that values should be used only as a screen out factor when the applicant reports very strange or conflicting values. However, values should not be used as a screen in factor.

### **4.3. The screen out stage**

This section shares the findings related to the screen out stage. Companies often use a screen out stage as a first step of the employee selection process. The aim of the phase is to find reasons to reject unsuitable applicants that do not fulfil a minimum qualification level. (Mueller-Hanson et al. 2003) Interviewees were asked if they use a screen out stage in their employee selection process, and how they would structure their screen out phase.

All interviewees reported that they use a screen out stage. The phase was described as a method of quickly deciding which applicants are clearly not suitable for the job. This section will first introduce the methods that the interviewees use in their screen out stage. Afterwards, CVs and online application forms are discussed in more details.

#### **4.3.1. Methods used in the screen out stage**

Table 4.5 summarizes the different methods that the interviewees use within the screen out stage. Also, the main selection criteria that the interviewees use in the screen out stage are reported in the table.

*Table 4.5: Methods and selection criteria used during the screen out stage*

Inter- viewee	What methods do you use in the screen out stage of the employee selection pro- cess?	What is evaluated?
1	LinkedIn or CV	<ul style="list-style-type: none"> <li>- Has the applicant studied in a good school?</li> <li>- Does the applicant have experience from challenging working environments?</li> <li>- Does the applicant have excellent experience from voluntary work?</li> <li>- Has the applicant any special talents, for example speaking fluently multiple languages?</li> </ul>
2	CV, application letter, code samples	Work experience and skills.
3	CV and application letter.	This topic was not discussed during the interview.
4	CV, application letter, transcript of records and diplomas	What kind of achievements and experiences the applicant has? Specifically looking for leadership roles throughout the applicant's life: in school, sports teams and work.
5	CV or LinkedIn, and for example in trainee recruitments assignments that are related to the actual job might be used.	Previous work experience, qualifications, competences
6	CV	Some (job specific) criteria that are missing, e.g. language skills. If the skill is missing, the applicant is excluded.
7	Structured online application form with questions that are directly linked to the actual job.	Only facts, and no possibility for free-form writing.
8	Structured online application form	Concrete facts such as previous work experience and things that are most critical regarding the job in hand. Guarantees comparability of the answers.

The most commonly used method by the interviewees was evaluating CVs sent by the applicants. Six out of eight interviewees reported that evaluating CVs is the first step in their screen out phase. Previous work experience was mentioned as the main selection criterion that the interviewees are evaluating when reading CVs. Other factors that were mentioned were for example the school or university where the applicant studied, voluntary work and leadership experiences. Interviewees 7 and 8 stated that they use structured online application forms in their screen out phase. These online forms are discussed in more details later in section 4.3.3. Three interviewees reported that they use application letters in their process. As an example, interviewee 4 reported that application letter is used for assessing the motivation and interest of the applicant. Also LinkedIn, transcript of records, diplomas and code samples were used in the screen out phase.

Interviewee 5 told that when considering the screen out stage, the most challenging cases are the ones where the applicants' do not have previous work experience, for example when recruiting trainees. As presented above, previous work experience was the primary criterion that is assessed during the screen out stage, and it is difficult to assess CVs if the applicants do not have any work experience. The interviewee said that some companies use a personality profile in these situations: all applicants fill in an online survey in the first stage of the employee

selection process, and the ones whose profile match the ideal predetermined profile are selected to the next phase. Also interviewee 6 noted that tests could be used in the first stages of the employee selection process when the applicants do not have previous work experience. However, interviewee 5 underlined that this testing procedure in the beginning of the selection process has many problems. The interviewee proposed that especially if the job requires some formal competences or qualifications, it is advisable to use these as selection criteria. For example, if a company is recruiting a psychologist, then the applicant needs to have a master's degree in psychology and a licensing from Valvira. Furthermore, interviewee 5 stated that offline video recordings<sup>12</sup> and other assignments that are related to the actual job might be used in recruitments where the applicants do not have previous work experience.

#### 4.3.2. CVs

The interviewees were asked about their opinion on using CVs in the employee selection process. As table 4.6 below shows, those interviewees who used CVs in their process also saw CV as a quick and simple method both for the applicant and for the company. Interviewees 2 and 5 both stated that the reason for using CVs is to make the employee selection process easy for the applicants. Interviewee 5 commented that if there are hundreds or thousands of CVs, then it could be wise that a machine reads the CVs as the first step and seeks for example for keywords.

*Table 4.6: The use of CVs*

Inter-viewee	What is your opinion on using CVs to screen out applicants as the first stage of the employee selection process?
1	CVs work well in the screen out stage.
2	CV is simple and easy for the applicant. It is challenging to attract the top talents, thus we want the employee selection process to be easy for the applicants.
3	This topic was not discussed during the interview.
4	We ask the applicant to submit a very wide CV that covers everything from professional career to sports and free time activities. We then look for all kinds of leadership and initiative roles from the applicant's past.
5	CV and LinkedIn are easy for the applicants. A machine could also be used for searching e.g. keywords. Challenges arise when recruiting people who do not have previous work experience.
6	A compact CV that you glimpse through quickly works well. I select a few criteria to screen out applicants who do not fulfil those criteria.
7	An unstructured CV created by the applicant should never be used.
8	An unstructured CV that is done by the applicant should never be used since the CVs are not comparable.

Interviewees 7 and 8 had a totally opposite opinion on using CVs in the employee selection process compared to the rest of the interviewees. Interviewee 7 and 8 both stated that an unstructured CV, which is written by the applicant, should never be used in employee selection. Interviewees 7 and 8 argue that CVs are not comparable, and they make the assessors prone for unconscious rating errors.

<sup>12</sup> Video interviews and recordings are discussed in more details in chapter 4.4. The screen in stage



### 4.3.3. Structured online application forms

Structured online application forms refer here to online forms that are developed by the SME and that the applicants need to fill in usually as a first step of the employee selection process. The applicants normally have to report their previous work experience, educational background and other relevant skills and competences. These forms may have questions that are directly linked to the actual job, and the clear structure guarantees comparability of the answers. Both interviewees 7 and 8 had very strong opinions that only structured application forms should be used during the screen out phase. The interviewees argued that since CVs are created by the applicants, they are not structured nor comparable - and should never be used.

*“A CV created by the applicant is never structured, thus the CVs are not comparable” [Interviewee 8]*

Interviewee 7 also pointed out that the structured form should focus only on facts, and there should be no possibility for the applicant to leave free-form answers that are not related to the structure and to the questions that are designed in beforehand by the SME.

*“A really basic thing is that an unstructured CV should never be used! Always use a structured form, limit the possibility for writing unrelated and free-form answers, only facts, only the questions that the company wants the applicants to answer. This makes the screen out stage more efficient and valid.” [Interviewee 7]*

Some of the interviewees had dissenting opinions about structured application forms. Interviewee 2 said that they are not planning to use application forms, since there is a fierce competition about the best talents, and the company wants the employee selection process to be as easy and simple as possible for the applicant. Interviewee 5 mentioned that structured forms would be more valid and more comparable, and from the point of view of the employer the structured form would be better. However, interviewee 5 said that the forms take a lot of time to fill in, and applicants might see them irritating, thus the forms might unintentionally screen out qualified applicants.

## 4.4. The screen in stage

The screen in stage refers to a phase of the employee selection process where the employer is trying to select the best applicants. Opposite to the screen out stage, where the employer is looking for reasons to exclude applicants from the process, in the screen in stage the employer is trying to find reasons to include applicants in the process, and hires the applicant that has the highest rank based on test and interview scores. (Mueller-Hanson et al. 2003; Landy & Conte 2013)

This section will start by presenting the results regarding the characteristics of the screen in stage. Afterwards, the results related to homework, assignments and interviews are revealed.

#### **4.4.1. The characteristics and the contradictions of the screen in stage**

The interviewees were asked if they have a screen in stage in their employee selection process and what are the characteristics of the stage. Interviewees 5, 6 and 7 reported that a screen in stage is included in their process. Furthermore, they all stated that interviews are the most important part of the phase. Other methods that were used during the screen in stage were assignments, homework, individual psychological assessment, job related simulations, personality tests and general mental ability tests. Table 4.7 shows the results of the screen in stage discussions.

Contrarily to interviewees 5, 6 and 7, when discussing about the screen in stage, the other five interviewees reported that their employee selection process is only about screening out. In other words, these five interviewees had a process where they had specific criteria that were assessed in different stages of the process, and if all of these criteria were fulfilled and the applicant had passed all the stages, the applicant is qualified and hired for the job. Each step in their employee selection process is a hurdle, and if the applicant reaches a sufficient level within a step, he or she will automatically be invited to the next phase.

Interviewee 8 argued that the employee selection process should always be only about screening out applicants, and about “finding red flags”, in other words finding reasons why the applicant is not suitable for the job.

*“Psychology works better in excluding than including. It is much more accurate to screen out applicants that do not fulfil a specific requirement or skill level than to try to evaluate which one of the applicants is better than the other one.” [Interviewee 8]*

The interviewed experts from the three SMEs also noted that if an applicant passes all the steps, he or she is automatically offered a job, regardless of how many other applicants are applying or have also passed all the steps. If multiple applicants pass all the stages, they are all offered a job. These three companies are growing fast and constantly looking for talented applicants, thus they are able to recruit everyone who pass the whole selection process. However, not all SMEs have the luxury of hiring all talents: there might be only one open position, and the company has to decide who to hire. The screen in ideology is usually applied in this kind of cases. Interviewee 8 argued that even though the SME could only hire one applicant, the company should still only utilize screening out.

*“If many applicants pass all the stages, then you have to admit that according to your measurement system they all are good enough for the job.” [Interviewee 8]*

Table 4.7: How is the screen in stage designed?

Inter-viewee	How is the screen in stage designed?
1	The whole process is only screening out. If the applicant passes all the stages, he or she is offered a job.
2	The whole process is only screening out. If the applicant passes all the stages, he or she is offered a job.
3	The whole process is only screening out.
4	The whole process is only screening out. If the applicant passes all the stages, he or she is offered a job.
5	Interviews in all recruitments. Depending on the case, also assignments, individual psychological assessments, job related simulations, personality tests or general mental ability tests might be used.
6	Interviews and possibly assignments, personality tests or general mental ability tests.
7	A quick 30 minutes long interview for approximately 10 applicants, and about 3 applicants are selected to the next round. In the second interview round the interviews are longer, and they should thoroughly go through the applicant's skills.
8	The whole process is only screening out. Employee selection processes should always be screening out, in other words finding red flags. It is much more accurate to screen out applicants that do not fulfil a specific requirement or skill level than to try to evaluate which one of the applicants is better than the other one. If many applicants pass all the stages, then you have to admit that they all are good enough for the job.

#### 4.4.2. Homework and assignments

The interviewees were asked about their opinion on homework and assignments that are solved at the office during the interview. Table 4.8 summarizes the results. Interviewees 1, 2 and 4 said that their process includes assignments, and interviewees 5 and 6 said that depending on the case, assignments might be used. Quite similarly, interviewee 1 uses homework in all recruitments, and interviewees 2, 5 and 6 might use homework depending on the job.

On the other hand, interviewees 7 and 8 reported that no homework or assignments are used. They both argued that there is a major risk that homework and assignments are not measuring the right things. Similarly, the evaluation of the homework and assignments is problematic.

*“The problem is that can you read the answers in a right way? For example, the applicant might not have any previous experience or knowledge related to the homework or assignment, and he or she is not chosen to the next round. However, it might be that the applicant would still outshine in the actual job.”*  
[Interviewee 7]

Interviewee 7 noted that some simple assignments could be used, for example an assignment for office work where the applicant has to work under time pressure and complete as many tasks as possible. Similarly, interviewee 8 said that assignments and homework that are closely related to the actual job are in principle good, but in practice they should not be used: if the task does not have one clear right answer, then the evaluation and validity of the assignments and homework are problematic.

*Table 4.8: Do you use homework or assignments in the employee selection process?*

Inter- viewee	Do you use homework or assignments in the employee selection process?
1	Yes, the process includes both homework and assignments.
2	Yes, the process includes assignments and possibly also homework.
3	No homework or assignments are used.
4	The process includes assignments that are solved at the office. The assignments test for example analytical skills.
5	Depending on the case, homework and assignments might be used.
6	Assignments and homework might be used.
7	No homework is used in the process. The problem is that how do we know if the homework is measuring right things? Also, how is the homework or assignment evaluated? Some simple tasks like office work can be tested with simple tests that have a time pressure.
8	Homework or assignments closely related to or simulating the actual job are good in principle, but the problem is how to get a valid evaluation. If the assignment has a clear and concrete one right answer, using homework could be acceptable. However, homework or assignments are not used in the employee selection process of interviewee 8.

#### **4.4.3. Interviews**

Like mentioned in section 4.1.1, all of the interviewees used interviews in their employee selection process. Furthermore, two interviewees specifically mentioned that interviews are the most important method in the employee selection process. Also, the employee selection processes in table 4.1 clearly show that interviews have a dominant role in all of the processes: interviews seem to be the most important method in the employee selection process, thus they require a detailed analysis. This section will present the results of the interview method in more details.

Interviews can be divided into three categories: unstructured, semi-structured and structured interviews. Three interviewees reported that they use structured interviews, two use a semi-structured approach, and one interviewee used only unstructured interviews. Two companies reported that they use both semi- and unstructured interviews. Findings can be seen in figure 4.2 and table 4.9.

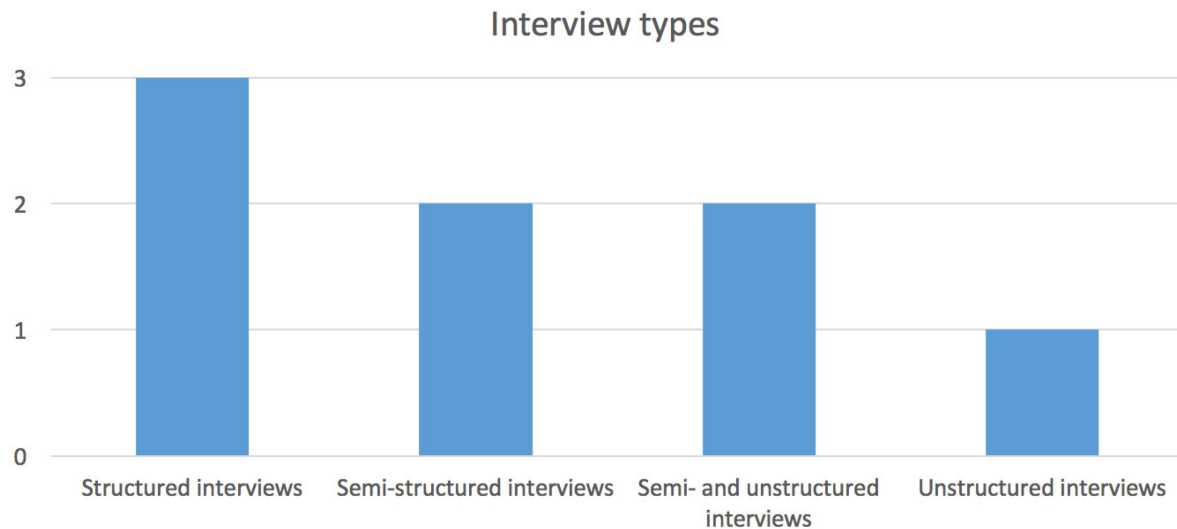


Figure 4.2: Interview types

Table 4.9: Interview designs

Inter- viewee	How do you design the interviews: Structured or unstructured?
1	Some of the meetings are unstructured, such as lunch meetings. On the other hand, other interviews are semi-structured.
2	Semi-structured theme interviews that include the same themes, but the themes are not necessarily in the same order and the discussion might meander.
3	Unstructured interviews, but the themes are the same.
4	Structured interviews. The evaluation guidelines are very concrete and measurable: grades are linked with specific words and phrases.
5	Semi-structured interviews. All questions are selected in beforehand, but probing questions might be asked during the interview.
6	Semi-structured interviews that are usually theme interviews.
7	Structured interviews focusing on technical skills.
8	Structured and very detailed interviews focusing on what the applicant did in his or her previous jobs.

Interviewees 4, 7 and 8 highly valued structured interviews. Interviewee 4 said that their interview evaluation guidelines are so concrete that even single words are linked to specific grades. Also interviewees 7 and 8 highlighted the importance of very structured interviews. Interviewee 8 argued that when using unstructured interviews, 85 percent of the outcome is defined only by the interviewer's personality. Interviewee 8 continued that the only way to avoid this bias is to make the interview process as structured as possible and to eliminate all gut feeling from the process. The interviewee stated that structured interviews has been shown to have a very high predictive validity.

*“An unstructured and short interview is definitely the biggest legal protection risk in employee selection. That kind of interviews measure only how well two persons (the interviewer and the interviewee) get along, and how well the two temperaments match. This simply does not predict the applicant’s future job performance at all!” [Interviewee 8]*

Interviewee 8 instructed that the interviews should be totally structured and focus on things that the applicant was doing in his or her previous jobs: what did the applicant learn, what kind of challenges did she have, how did she change her working strategies after failures, and how did she solve problems. Interviewee 8 told that the reason for asking this kind of questions is that the past behavior is the best predictor of future behavior: the applicant will continue to behave and work in the same way that he or she was behaving in the previous jobs. Also, according to interviewee 8, it is not wise to discuss or ask about any future visions, since it is easy for the applicant to come up with attractive visions that do not predict job performance.

*“Do not ask anything about future visions, since psychopaths give visions that sound the best, most beautiful and most trustworthy.” [Interviewee 8]*

In the same way as interviewees 4, 7 and 8, interviewee 5 valued also the comparability of the structured interviews. Interviewee 5 commented that structured interviews ensure better comparability, but he still uses semi-structured interviews that consist of predetermined questions. According to interviewee 5, in the semi-structured interview the interviewer can get more information out of the applicant, since the interviewer can ask probing questions and “dig deeper” into topics that raise concern or are particularly interesting. These probing questions might not be the same for all applicants.

Next, the number of interviews within the employee selection process is discussed. The number of interviews varied among the interviewees. The employee selection process of interviewee 4 consisted of four different interviews with four different interviewers. Interviewees 1, 2 and 3 had three interviews in their process. The rest of the interviewees reported that their process consists of 1-2 interviews depending on the case.

Both Interviewees 6 and 7 mentioned that the first round of interviews could be relatively short, and that the company should invite for example around 10 applicants to the first round. Interviewer 6 pointed out that in addition to the primary task of collecting evidence for the employee selection, this first interview round can also be seen as a market study: the company can gather information about what is happening in other companies that work in the same industry.

The use of video interviews was also discussed. Interviewee 5 stated that Skype interviews or recorded videos, also called one-way video interviews, are cheap and convenient ways of conducting interviews. In the one-way video interviews, the applicant records videos of herself, possibly answering some predetermined questions, and sends the videos to the company.

This method ensures that the interview is not tied to a specific location or time. Interviewee 5 argued that video interviewing saves both time and money and that same results can be achieved with video interviews and with traditional interviews.

On the other hand, interviewee 8 argued that the interpretation of the videos might become costly if the assessment is done based on a gut feeling. Interviewee 8 claimed that there is also a risk that the assessor is evaluating something else than job related criteria. Also, it is unsure how different people behave when they need to record a video of themselves.

Lastly, interviewee 4 pointed out that developing the structured interview process takes a lot of time. However, according to the interviewee, investing one or two weeks of time for the development process is a low price compared to unsuccessful recruitments, especially in Finland where laying off employees is very difficult. Also, a high-performance team can skyrocket the growth of the SME, so hiring right people is crucial. Interviewee 4 would personally take the time to develop the structured interview process regardless of how long it would take.

#### **4.4.4. Reference checks**

Three out of eight interviewees used reference checks in their employee selection process. Interviewees 6 and 8 state that past behavior predicts future behavior, and the applicant will act in the same way on the new job than on the previous one. Due to this, reference checks are a crucial part of the selection process according to the interviewees. Interviewee 6 stated that if the recruitment is very important, then it pays off to even meet the former employers face to face, since the employers might not reveal all information on a phone call. Interviewees 3, 6 and 8 all used reference checks after interviews, meaning that only the employers of the final few applicants are contacted.

### **4.5. Pre-employment testing**

This section introduces the finding related to pre-employment testing. The section starts by sharing the discoveries of the use of pre-employment testing in employee selection. Afterwards, both general mental ability tests and personality tests are discussed in more details.

#### **4.5.1. The use of pre-employment testing in employee selection**

Pre-employment testing was a subject that divided the interviewees' answers in many ways. Firstly, one difference was the varying use of pre-employment testing. Other selection methods like interviews, CVs or application forms were used in all recruitments of the same interviewee. In contrast, only interviewee 3 reported that pre-employment testing is a permanent part of their employee selection process. In addition, the global management consulting company reported that their main office in Europe uses general mental ability tests, but tests are not used in Finland. However, four other interviewees stated that pre-employment testing might be used, but the use of testing is decided case by case depending on the job. In total, if we count in the global management consultant company's main office, six out of eight interviewees said they use or might use pre-employment testing now or in the future.

Pre-employment testing was used in the later parts of the employee selection process. Those interviewees who had a screen in stage reported that if tests are used, they are a part of the screen in stage. Others, whose process was only about screening out applicants like reported in section 4.4.1., used tests in one of the last stages of the selection process. Interviewees 6 and 7 stated that if pre-employment testing is used, only the last 1-3 applicants should take the tests. The only exception that was mentioned was recruitments where the applicants do not have any previous job experience: according to interviewee 5, in this situation some employers might use pre-employment tests early in the selection process. These results were presented in more details in section 4.3.1.

Some of the interviewees reported that they do not feel tests are needed. Interviewee 1 told that their selection process trusts on “swarm intelligence”, and tests are partly compensated by the fact that the whole team gets to know the applicants well. Also interviewee 2 stated that their company have not noticed a need for using tests: their selection process has been working well and the turnover has been small. Furthermore, the company used probation period and all employees have a recruitment guarantee: if the new recruit does not enjoy the job, he or she is offered a monetary bonus for leaving the company during the probation period. However, even though interviewee 2 reported that their company does not use tests, the interviewee still personally believed that pre-employment testing gives comprehensive and valid results if conducted properly. According to interviewee 2, the problem that arises is that some pre-employment tests can be conducted with a very limited training or completely in the internet without an expert.

*“I do not believe that a 1-2 days training is enough to teach a person how to conduct (pre-employment) tests, you need a stronger background from the psychology.” [Interviewee 2]*

#### **4.5.2. General mental ability and cognitive ability tests<sup>13</sup>**

Interviewees 5 and 6 reported that depending on the job, cognitive ability tests might be used in the selection process. Also interviewee 4 noted that cognitive ability tests are used at their main office in Europe. Interviewee 6 told that regarding tests in employee selection, the cognitive abilities are the most important criteria to be tested. The interviewee stated that it is wise to compare the applicant’s level of cognitive abilities to the level of other people working in the field.

Interviewee 8 was a supporter of cognitive ability tests. The interviewee argued that cognitive ability tests are very reliable and valid: for example, if you cannot remember something or solve a problem, then you simply cannot. However, according to the interviewee the newest cognitive ability tests might still not be perfect on the individual level, and that companies should not select applicants based on Mensa tests. The interviewee’s approach was to use cognitive ability tests in the selection process, but not to use the test scores in decision-

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<sup>13</sup> See section 2.4.1. General mental ability for definitions of GMA and cognitive ability tests



making during the first 5 years. During the initial time, the test scores are compared to later actual job performance of the employee in order to get a valid correlation.

Interviewee 8 also added that testing cognitive abilities is a taboo in Finland. According to the interviewee, this can be seen in schools and in employee selection: many people think that it is acceptable to use personality tests in employee selection, but assessing cognitive abilities are viewed negatively, even though they are both very roughly 50 percent inherited, and rest is caused by the environment, parenting and education.

Interviewee 7 had a completely opposite view than interviewee 8. Interviewee 7 argued that cognitive ability tests should not be used in employee selection in Finland. The argument was that most of the general mental ability research is done in USA with materials and statistics provided by United States Department of Labor. Interviewee 7 argued that these materials include people that cannot write or read, thus it is evident that general mental ability predicts job performance within a very poorly educated population. However, interviewee 7 continued that in the Nordics where all have gone through a good educational system, cognitive ability tests do not work.

*“I guess that the predictive validity of cognitive ability tests in the big picture might be zero in the Nordics... ...You will for sure lose good candidates if you use cognitive ability tests.” [Interviewee 7]*

Interviewee 7 argued that the reason why a company will lose good applicants when using cognitive ability tests is that these applicants do not perform well in the tests. Some good applicants might not have studied much, but they have learned themselves, and a company could find out about the applicant's abilities by calling a former employer. However, these applicants are screened out in the cognitive ability tests.

Interviewee 8 had a very strong response to the arguments of interviewee 7.

*“The claim that the research about cognitive ability tests is biased is simply nonsense! The meta-analyses are so huge that the research is valid, even though some bias could exist in a single study. It is not clearly known what factors are most important, for example ability to learn or memory, but it is known that the cognitive abilities in general are important and that they predict future job performance.” [Interviewee 8]*

#### **4.5.3. Personality tests**

Similar to cognitive ability tests, the results regarding personality tests were divided. Interviewee 3 reported that a personality test is used in all recruitments, and that after the test an outside psychologist interviews the applicant. According to interviewee 3, the company's previous experience shows that the personality test and the psychologist's interview together measure with a 90 percent certainty how well the applicant will fit in the company's culture. The test measures for example the applicant's values, personality, and organizational fit, and

the psychologist gives a recommendation to the team how well the applicant scored in nine factors that are used as criteria throughout the company's selection process. The personality test results are also used during the induction period.

Interviewees 5, 6 and 7 stated that depending on the recruitment, personality tests might be used in the employee selection process. However, interviewee 5 pondered that personality tests could scare some applicants. Interviewee 6 said that personality could possibly be tested, but companies should not emphasize for example extraversion. Interviewee 7 argued that meta-analyses have shown that personality tests have a statistically significant but relatively modest predictive validity. The interviewee continued that the results of the personality tests are important later after the recruitment since the results give tools to the supervisor and make it easier to understand the behavior of the applicant. In the end, interviewee 7 stated that personality tests are not a necessity in SMEs' employee selection processes, and that for example structured interviews have shown to have much higher predictive validity than personality tests. The interviewee continued that only occupations such as pilots, firefighters and police need to use personality test to screen out unwanted traits like sadism.

Also interviewee 8 agreed that personality tests can be used when recruiting to the above mentioned occupations. However, interviewee 8 had very strong arguments that personality test should not be used in any other occasions, and specifically not in screen in stage when comparing applicants with each other. Firstly, interviewee 8 stated that personality tests are not designed to be used in individual diagnostics: the test are designed to measure phenomenon in population level. For example, conscientiousness has been shown to have an 8 percent predictive validity on job performance. However, interviewee 8 continued that this cannot be applied to individual level, since the score of an individual might be anything from 0 to 15, and the relationships are not linear. Tests cannot even say if an individual person scores high on a trait or not compared to others. To answer this, interviewee 8 argued, the test should be normalized with whole populations, not within a company. Furthermore, interviewee 8 stated that even this is not enough:

*"A person who is considered highly active in Finland might be viewed the opposite in Italy. Everything depends on the environment." [Interviewee 8]*

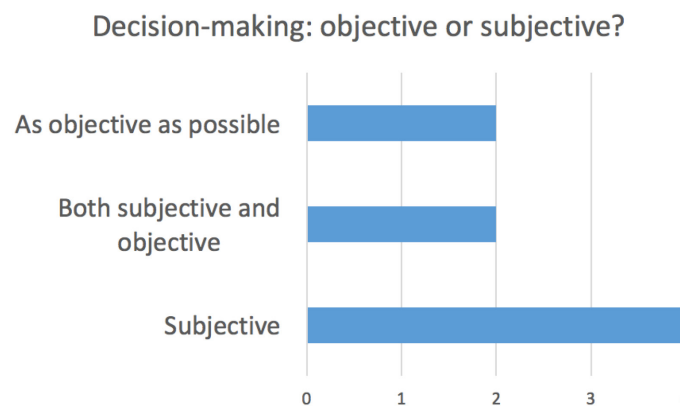
## **4.6. Decision-making**

This section introduces the finding related to decision-making. In the beginning, the question whether the employee selection process and decision-making should be objective or subjective is discussed. Secondly, results of grading, assessment and comparing applicants with each other are presented. In the end, the last section shares the interviewees' insights about who should be involved in the employee selection process.

### **4.6.1. Objectivity vs. subjectivity**

The interviewees were asked whether their employee selection process and decision-making are designed to be objective or subjective. Figure 4.3 below summarizes the findings. Inter-

viewees 1, 2 and 3 all reported that their decision-making is subjective. Both interviewees 1 and 2 stated that they aim to some degree of objectivity, but in the end, even though there are for example model answers for assignments, evaluating and scoring the assignments happen quite subjectively. Interviewee 2 also noted that they are recruiting team mates for themselves, and it is important that all employees feel that the applicant fits to the culture. Similarly, interviewee 3 reported that if even one employee says that he or she does not want to work with the applicant, the applicant is immediately rejected. Interviewee 3 explained that this kind of feelings can be difficult to explain, and due to this no further explanation is needed from the employee. This kind of decision-making is very subjective.



*Figure 4.3: Decision-making: objective or subjective?*

Also interviewee 6 supported subjectivity in SMEs. However, the interviewee noted that he has seen matrixes, weighted scores and other methods in use in big corporations, and that this kind of methods for sure add objectivity and value to the decision-making process. Still, in the end, the interviewee stated that the CEO's gut feeling is important in the decision-making, and regardless of the weighted scores and matrixes, if the applicant's face does not appeal and something is not working in the cooperation, it has to be taken into account.

Interviewee 4 reported that their decision-making is as objective as possible, and interviewees are not allowed to use any gut feelings. Grading is very objective, since the grades are tied to model answers, which can be so detailed that the applicant needs to say specific words. However, the interviewee noted that in reality it is possible that the process is not totally objective. The only part where the interviewers are allowed to use subjectivity is after the interview, when the interviewer needs to fill in a form that asks if the interviewer would like to work with the applicant. Compared to interviewee 3's case, where no explanations were needed from the employee, interviewee 4 reported that each interviewer needs to give clear reasoning if he or she does not want to work with the applicant. According to interviewee 4, it is alarming if even one out of four interviewers report that he or she does not want to work with the applicant, but it does not mean that the applicant is immediately rejected. The interviewers then discuss together what is the actual reason behind the feeling, and if it is a reason for rejection. In some cases, it might be that the applicant is hired even though some of the inter-

viewers did not wish to work with the applicant. This is possible since the company has many employees, and everyone does not need to work with everyone.

However, interviewee 4 noted that when working in a small team, more emphasize needs to be given for the subjective feeling. The interviewee continued that if he or she would be responsible for recruitment in a small team, the employee selection process would first be as objective as possible, and in the end the subjective question “do I want to work with the applicant and do 14 hour days with him or her” is considered. Alternatively, interviewee 4 pondered, the process could start with the subjective question, followed by the objective assessment of skills and knowledge.

Interviewees 5 and 7 had together quite similar views regarding objectivity and subjectivity. They both stated that the process can never be totally objective, and that some subjectivity is needed. Interviewee 7 argued that it is not wise to forget subjectivity and make all decisions only based on for example tests. Interviewee 5 said that skills and knowledge should be assessed as objectively as possible. However, in the end, the supervisor either trusts or does not trust the applicant. Interviewee 5 argued that it creates problems if the decision maker’s responsibility is minimized by trying to make the process as objective as possible. The supervisor needs to get along with the applicant, but it is not enough:

*“Subjectivity is a necessary condition, but not a sufficient condition.” [Interviewee 5]*

Lastly, interviewee 8 stated that the decision-making should be as objective as possible. Everything that is measured has to be extremely concrete, and there has to be mutual norms and grading guidelines for the assessors to avoid the use of gut feeling. However, according to interviewee 8, all bias can never be removed from the process.

#### **4.6.2. Final decision, assessment and grading**

The interviewees were asked how they make their final hiring decision: for example, what kind of grading system they use and do they combine scores from different employee selection methods and steps to a final score or grade. Also topics like weighted scores and average scores were touched.

Firstly, interviewees 1, 2, 3, 4, 5 and 8 all reported that their employee selection process does not include combining scores. If the applicant passes one step in the process, it means that the applicant has a sufficient knowledge or skill level regarding the criterion that the step is assessing, thus there is no need to combine a final score in the end of the selection process.

Interviewees 1, 2, 3, 4 and 8 also reported that applicants are not compared with each other at any point of the employee selection process. Interviewee 4 stated that each one of the steps in their employee selection process include a predetermined skill or knowledge level that all the applicants have to pass. Interviewee 4 called this knowledge or skill level as an “absolute bar”. If multiple applicants pass all the absolute bars, everyone is hired. Due to the fact that

applicants are never compared with each other, no combination of scores is needed for the final decision.

Interviewee 5 reported that there is no point in using weighted scores or combining a final score from all the steps from the selection process. The interviewee argued that there is no justification for weighted scores since the assessment is never accurate enough, and the weighted scores would create an illusion of accuracy. Interviewee 5 advised that the best applicant should be decided so that he or she has reached a sufficient level on all selection criteria, but the applicant is the best in the few most important criteria. Similarly, interviewee 7 shared the same view than interviewee 5. Interviewee 7 argued that in SMEs it is not reasonable to use weighted scores or average scores. The interviewee argued that the key takeaway is to make both the employee selection process and the decision-making process as simple as possible and to use common sense. In the end of the process, the final decision should be based on 1-3 most important criteria.

Also interviewee 8 stated that SMEs should not use weighted scores or averages. According to the interviewee, it is a common myth that changing gut feeling to numbered scores would make the decision-making somehow more valid. The interviewee gave also an example regarding average scores:

*“If you have two applicants that both score an average score of 3, they might be totally different in real life. Could be that the other one scored 1 and 5 and the other 3 and 3. It is much better to use a sufficiency condition or a ‘red flag’: in other words, each applicant has to be good enough in all specific criteria.” [Interviewee 8]*

Interviewee 8 also argued that after all the sufficiency conditions have been met, the assessor needs to accept that the process cannot be more accurate. Furthermore, if the employee selection process is working well, then there is a high probability that all the applicants that pass all the sufficiency conditions are qualified for the job and will most likely perform well.

#### **4.6.3. Validity**

Interviewees were asked how they ensure that the employee selection process is valid. Interviewees 1, 5 and 6 mentioned that assessing same criteria with different methods is a way of trying to ensure the validity of the process. Interviewee 5 commented that if one method fails and gives results, which are not supported by other methods, no assumptions can be made from the results of the unreliable method. Interviewee 1 also reported that the feedback from the teams, low turnover rate and an increasing revenue per person rate all indicate that the employee selection process is valid. Only a few people have left the company, either from their own will or because the person-culture fit was not good enough.

Interviewee 4 described another type of process for ensuring the validity. In their company, all interviewers are trained for interviewing. Furthermore, after the interviewer has had over 30 interviews, his or her interview results are compared with a global database in order to find

out if the interviewer makes systematic rating errors such as leniency error. If areas of improvement are discovered, then the HR team or international trainers train the interviewer.

Lastly, interviewees 4 and 8 both reported that the performance of the hired applicant is followed and compared to the results of the employee selection process. According to interviewee 8, it is important that SMEs start to track how their selection process works, since it gives valuable data in the long run.

#### 4.6.4. People involved in the employee selection process

In the end, all interviewees reported that people make the final decisions, thus a relevant question was who should participate in the employee selection process. Figure 4.4 below summarizes the findings. Six of the interviewees mentioned that the CEO, partner, owner or a leading person of the company should be involved in the employee selection process. Secondly, four interviewees reported that the supervisor and the team or co-workers should participate in the process. Only three interviewees reported that the HR department is involved.



Figure 4.4: People involved in the employee selection process

Even though the CEO or some other leading person of the SME were in most of the cases involved in the employee selection process, it did not directly mean that the final decision was done only by the leading person. For example, interviewee 3 stated that everyone's opinion is equally important. If anyone from the team at any point of the process says that the applicant should not be chosen, his or her opinion is listened and no explanation is needed. Similarly, interviewee 4 told that everyone who is participating the selection process must report if he or she wants to work with the applicant.

In the end, it is noteworthy to mention that interviewees 1, 2, 3, 4 and 8 all reported that the CEO or other leading person interviews the applicant in the final stages of the selection process. This indicates that the CEO seems to have the final word: even if the applicant has passed the interviews with the team and with the supervisor, the CEO can still reject the applicant.

## 5. Discussion

This chapter integrates the results with the literature and concludes the findings. The chapter will discuss the findings in the order of the research questions. The chapter starts by reviewing the characteristics of the employee selection process in SMEs, followed by the findings related to selection criteria and job analysis. Afterwards, the employee selection phase, including both screen out and screen in phase, is discussed. Lastly, pre-employment tests and decision-making in SMEs are reviewed. In the end of this chapter, the reliability, validity and limitations of this study are assessed and suggestions for future studies are introduced.

The aim of this study is to develop an employee selection process framework for SMEs, thus the main problem this study solves is:

*“How should SMEs develop their employee selection process?”*

The research questions are presented below. All research questions are answered in this chapter.

*RQ1: What kind of characteristics and methods describe the employee selection process of SMEs?*

*RQ2: How should SMEs decide the selection criteria for hiring?*

*RQ3: What kind of features do screen out and screen in stages have?*

*RQ4: Why should or should not pre-employment testing<sup>14</sup> be a part of the employee selection process in SMEs?*

*RQ5: How should SMEs manage decision-making in the employee selection process?*

### 5.1. Characteristics of the employee selection process in SMEs

This section will discuss the findings related to the characteristics of the employee selection process in SMEs. The section starts by reviewing whether the SMEs should have an in-house selection process or an outsourced one. Afterwards, the topics of applicant's perspective and company's perspective are explored, and lastly the SMEs main challenges are discussed. Specific selection methods and the selection process framework are presented later.

#### SMEs should have an in-house selection process

The empirical findings were unanimous that SMEs should have an in-house selection process. The only interviewees who brought this topic up were interviewees 5, 6 and 7, who all are psychologists and work as employee selection consultants for companies. Nevertheless, they concluded that SMEs should not outsource their selection process. Only if the company is very small and there is for example no plans of expanding it, then outsourcing could be wise. An example would be a small importing company. However, according to interviewee 7, in most of the cases it is cheaper and safer that the SME masters the process itself. Lastly, in dif-

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<sup>14</sup> Pre-employment testing refers to the testing of the applicant's job suitability that occurs during the employee selection process (Arthur 2005)

difficult recruitments SMEs could listen to the advices of interviewee 6 and combine their own process and the use of headhunters. There is wisdom in interviewee 6's words: firstly, headhunters can directly call companies and applicants that the company cannot reach for courtesy reasons. Secondly, headhunters can find people that otherwise would not apply, and whose motivation towards the new company might be greater since they are leaving a job they are enjoying. However, further research is needed regarding both applicant's motivation and the combined use of in-house selection process and outsourcing.

### **Applicant's perspective vs. company's perspective**

This study originally excluded the applicant's perspective. However, the findings from the interviews regarding the applicant's perspective were so important that they need to be taken into consideration in employee selection, thus the topic is discussed here. Applicant's perspective might be conflicting with the company's perspective, since the valid and reliable processes that the companies are valuing might be for example long, stressful and challenging from the applicant's perspective. Interviewee 5 had a valid point that in reality it is nearly impossible to separate the two perspectives. If the process is too difficult for the applicants, there is a chance that the SME loses the best applicants. Also interviewee 2 pointed this concern, and highlighted that this is specifically the case when recruiting software developers: in 2017 when this study is being written, there is a shortage of software developers in the job market, and developers can basically choose where they want to work. Interestingly also software developers need to pass the long employee selection process of the company that interviewee 1 is representing, and interviewee 1 did not mention the same specific situation of software developers that interviewee 2 brought up.

Given the importance of the statements above, it seems reasonable that SMEs should at least in some respect take into account also the applicant's perspective. However, to what extent? Even if interviewee 5 argued that the two perspectives cannot be separated, there needs to be a balance between the company's and the applicant's perspectives. For example, interviewee 5 argued that even though structured application forms are more valid and thus better from the company's perspective, he would use CVs and not application forms, because from the applicant's perspective application forms are unpleasant. Structured application forms usually consist of biodata, in other words the person's previous work history, education, language skills etc. Most of this information is often in CVs and resumes, so the information can be easily copied and pasted. The forms might also have work related questions, which the applicant needs to answer. All in all, filling in the form takes approximately from a quarter of an hour to a few hours. From this perspective, if an applicant is not willing to invest this small effort, is he or she really a good candidate for the SME, or should the applicant in any case be screened out? What does this tell about the applicant's motivation towards the job?

Structured application forms are only one example: also pre-employment testing has been criticized for possibly screening out some qualified applicants. However, it can be concluded that in jobs like software development jobs where the market is heated and supply and demand do not match, SMEs should consider carefully the applicant's perspective. On the other



hand, in jobs where the demand and the supply are more or less in balance, it is arguably advisable to think more from the company's perspective. Even in this case, a well clarified and reasoned selection process should help the applicants to understand the process: the applicant understands that a more objective and valid process is actually beneficial and fair for both the SME and the applicant.

In the end, the coin has two sides, and the company has to ponder what kind of risks it is ready to take: firstly, if the process takes the applicant's perspective too much into consideration, it might lead to the use of invalid methods such as CVs, unstructured or semi structured interviews, and not using pre-employment tests, which in turn may lead to rater errors, bias and unsuccessful hires. On the other hand, if the selection process is developed too much from the company's perspective, it might mean that qualified applicants do not apply, and even though the process itself is valid, the company never gets to choose from the best applicants. More research would be needed to find out how the balance between the applicant's and the company's perspective should be decided.

## **Main challenges**

The interviewees reported many different challenges that SMEs face during the employee selection process, and the most important ones are discussed in this section. Firstly, interviewees 5, 7 and 8 all talked about the importance and the challenge of the job analysis phase. These interviewees were psychologists who have seen multiple companies during their career, and they argued that in many cases the job analysis phase is insufficient, which leads to problems in the later stages of the process. As an example, interviewee 7 stated that SMEs are often in a hurry, and the hiring managers do not focus enough on the job analysis phase. This issue is arguably one of the most important challenges that SMEs are facing during employee selection. If the job analysis phase fails, it does not matter how valid methods the process itself is utilizing, because the process is measuring wrong criteria and giving misleading information to the decision-makers. It is advisable that SMEs pay close attention to the job analysis phase.

Secondly, the topic of best performers not actively looking for jobs was brought up by interviewees 5 and 6. This important issue concerns the recruitment phase, in other words the phase where the company is attracting applicants and which is between the job analysis and the employee selection phases. The recruitment phase is not a part of this study, thus a definitive answer for the issue cannot be concluded. Combining the company's own selection process and a headhunter, like interviewee 6 proposed, could help in this problem. However, more research would be needed.

Lastly, the cost of an unsuccessful hiring decision was referred by interviewees 1 and 4 and by Carroll et al. (1999) and Gamage (2014). Both interviewees argued that SMEs with small teams simply cannot bear the total costs of poor recruitments: the cost is not only monetary, since an unsuccessful hire can also poison the company culture. From this perspective, SMEs could possibly focus on developing processes that minimize the risk of a poor recruitment,

even if it enlarges the risk that the top performers might not apply. However, this study did not provide enough evidence to draw definitive conclusions or advises regarding the issue.

## **5.2. Defining requirements: job analysis and selection criteria**

This section will discuss and conclude the findings of job analysis and different selection criteria like GMA, work experience, grade point average and personality. In the end, also ability to learn, values and person-environment fit are reviewed.

### **Job analysis**

The interviewees and the literature had similar views about job analysis<sup>15</sup>. All interviewees stated that the employee selection process should start with a job or competence analysis. Also the literature agrees with this: job analysis should be conducted prior to the employee selection process, and also prior to the recruitment process (Landy & Conte 2013, p.176). Similarly, the interviewees and the literature agree about the aim of the job analysis. Landy and Conte (2013, p.176) write that job analysis aims to determine the required knowledge, skills, abilities and other characteristics (KSAO), and that based on the analysis, organizations choose or develop assessment tools for evaluating the identified KSAOs. Likewise, for example interviewee 8 reported that SMEs should analyze the actual job, decide what is assessed during the employee selection process, and leave out criteria that cannot be measured concretely.

According to interviewee 7, the recent literature is turning to competence analysis rather than job analysis, and that the traditional job analysis procedures are outdated. Some of the findings from the literature support interviewee 7's view. For example, since jobs and the nature of work are changing, the traditional job analysis and the assumptions that it is based on may not work anymore (May 1996). Due to these findings, it might be advisable for SMEs to conduct further research regarding competence analysis and modern job analysis approaches.

This thesis is not able to give a full step-by-step guideline to how to conduct a job analysis. However, the following advices are summarized from the literature and from the results of the interviews, and will help SMEs to start their job analysis phase:

1. Job analysis is probably the most important phase of the employee selection process. SMEs should invest in it, since the investment pays off during the later stages of the selection process (interviewees 7 and 8)
2. Each new kind of recruitment should start from the scratch with a job analysis. (Interviewee 5)
3. Analyze the actual job, decide what is assessed, and leave out all criteria that cannot be assessed concretely. (Interviewee 8)

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<sup>15</sup> This study uses the term "job analysis" as a generic term that refers to the phase where the job is analyzed and the selection criteria are decided.

4. Supervisors (Cook 2009, p.61; interviewees 5, 6 and 7) and team members (Cook 2009, p.61; interviewees 1, 2 and 7) and CEOs (interviewee 6) have the best information about the job in SMEs.
5. When discussing with the supervisor or team member, start with open ended questions, and try to avoid leading the person with your own opinions. Then try to focus and specify to get to concrete requirements and selection criteria. (Interviewee 5)
6. Selection criteria should be decided according to the company's long term strategy, not according to the person who left. (Interviewee 6)
7. Creating a selection plan matrix (Appendix 2) is beneficial and makes the employee selection process more valid (Berry 2003, p.169; interviewees 1 and 6)

## **Selection criteria**

Selection criteria that are often described in the literature and that were discussed in the interviews include for example general mental ability (GMA), personality, previous work experience and grade point averages (GPA) (Landy & Conte 2013; Tesluk & Jacobs 1998; Tett & Christiansen 2007; Dye et al. 1993; Schmidt & Hunter 1998). The results of this study and the literature support the use of general mental ability and previous work experience as selection criteria. However, the findings indicate that personality and GPA should not be used in SMEs. There were not enough data about ability to learn, PE fit nor values, thus it is advisable that SMEs use caution if these criteria are assessed. Next, these findings are discussed in more details.

## **GMA**

This study found that GMA is a valid selection criterion for SMEs. Even though only four interviewees reported that they might assess GMA depending on the recruitment and job, none of the interviewees directly stated that GMA is an improper criterion. Interviewee 7 opposed using cognitive ability tests, but the interviewee did not specifically oppose GMA. On the other hand, interviewees 5, 6 and 8 highlighted that GMA predicts future job performance. According to wide meta-analyses, GMA has a predictive validity of 0,51, which is the highest reported predictive validity of any selection criteria (Schmidt & Hunter 1998). The literature is clear that GMA is one of the best, if not the best, predictor of future job performance, specially in very complex jobs that require a lot of information processing (Landy & Conte 2013, p.94; Schmidt & Hunter 2004). Both interviewee 8 and Schmidt and Hunter (2004) agree that the more complex the job is, the better GMA predicts job performance.

Based on the discussion above, it seems obvious that also SMEs should utilize this highly predictive selection criterion. However, SMEs should remember the advice of interviewee 5, who stated that even though GMA correlates with job performance, it does not automatically mean that GMA is an important criterion in all recruitments. SMEs need to evaluate the requirements and the environment of the job: if the information-processing demands of the job are high, and it is complicated to define the job, then there is a clear reason for using GMA as a selection criterion.

## **Work experience**

Thinking from the SMEs perspective, previous work experience is an easy and cost-effective criterion that was shown to be valid according to the literature and according to the empirical findings, thus it is justified to use it as a selection criterion. The interviewees reported that previous work experience is the primary criterion that is assessed during the first stages of the employee selection process. The literature also supports the use of work experience: Quiñones' et al. (1995) meta-analysis found that work experience and job performance have a correlation of 0,27. However, Tesluk and Jacobs (1998) argue that even though work experience is widely used in human resource functions, the topic would require more research. Interestingly, it seems that there are not really any alternative criteria that could replace previous work experience in the first stages of the selection process: the idea of using online tests in the beginning of the process was opposed by the interviewees, and it might be too time demanding to use for example homework as the first step.

## **Grade point average (GPA)**

GPA should not be used in employee selection in SMEs. Only interviewee 4 mentioned that the company reviews the applicant's GPA, while no other interviewees mentioned GPA. Furthermore, Landy and Conte (2013) argue that there is not enough research that would support using GPA as a selection criterion. Most importantly, technology giant Google has recently stopped using GPA as a selection criterion, since after working a few years at Google there is no correlation between GPA and job performance (Bock 2013). From this perspective, SMEs should not use GPA as a selection criterion.

## **Personality**

Personality as a selection criterion seems to be a contradictory subject both amongst researchers and SMEs. The previous research is divided into two categories: those who oppose or question the use of personality as a selection criterion (e.g Morgeson et al. 2007), and those who support its use (e.g. Hough & Connelly 2013; Landy & Conte 2013). On the other hand, the empirical evidence of this study suggest that SMEs do not need to use personality as a selection criterion. Only interviewee 3 reported that personality is a criterion in all recruitments, and interviewees 5 and 6 stated that in some recruitments personality could be used. Interviewee 7 said that in the end SMEs do not really need to use personality as a criterion. Interviewees 1, 2 and 4 opposed the use of personality. Lastly, interviewee 8 strongly argued that personality should not be used as a selection criterion because personality does not predict behavior, and since personality traits are abstractions, not facts, and that the traits are actually covenanted. It is noteworthy to mention here that interviewee 8 has been conducting high-level academic research about similar topics, thus the author of this study views interviewee 8's comments as highly valid.

In conclusion, the findings of this study suggest that SMEs should not use personality as a selection criterion. The previous research is contradictory, and does not give a clear reason to use or not to use personality as a criterion in SMEs. The empirical findings were also divided.

It is difficult to conclude if personality as such is a valid selection criterion. However, it is important to highlight that seven out of eight interviewees stated that personality either should not be used or is not necessarily needed in all recruitments, which means that a conclusion can be drawn that *personality is not needed* as a selection criterion in SMEs. Thus, since neither the previous research nor the empirical findings clearly support the use of personality as a selection criterion in SMEs, and the only valid conclusion is that personality is not necessary needed in SMEs, it is safest to advice that personality should not be used as a criterion in SMEs.

### **Person-environment fit<sup>16</sup>, values and ability to learn**

The study did not find any clear evidence regarding the use of person-environment (PE) fit, values and ability to learn in employee selection in SMEs. According to the definition of PE fit, values are usually a part of it (Ostroff & Zhan 2012). Previous research suggests that both recent and earlier theories of PE fit fall short of standards for strong theory (Edwards 2008). The authors of a meta-analysis also suggest that organizations should exercise caution if they use person-organization<sup>17</sup> fit in employee selection (Arthur et al. 2006). However, Ostroff and Zhan (2012) report that in organizations with a very strong culture PE fit may be an important factor. All in all, there is not enough previous research about using PE fit and values as selection criteria in SMEs to justify any clear conclusions.

Similarly, the interviews did not give enough data to draw any conclusions about PE fit, values and ability to learn. The empirical study showed that interviewees 1 and 2 assess person-environment fit. Both interviewees reported that fit is very important, and that a clear misfit means that the applicant is excluded from the selection process. Interviewee 3 assessed values. Interviewee 8, on the other hand, stated that values do not predict behavior, thus values should be used only as a screen out factor when the applicant reports very strange or conflicting values. Ability to learn was explicitly assessed only by interviewee 1, and there is not enough empirical evidence or previous research to make any conclusions about the ability to learn. In the end, due to the fact that the previous research is incomplete, and the empirical evidence did not give clear results, it is advisable that SMEs listen to Arthur et al.'s (2006) advice and exercise caution if they use PE fit, values or ability to learn in employee selection.

### **5.3. The screen out approach and the employee selection methods**

This sections discusses the phase of the employee selection process where the applicants are assessed. The section starts by comparing screen out and screen in approaches, and continues by discussing the methods that SMEs should use in their selection process.

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<sup>16</sup> Person-environment (PE) fit is the overarching term that includes both person-culture fit and person-organization fit. The terminology is vague, and the terms are often used interchangeably.

<sup>17</sup> Person-organization (PO) fit is a part of PE fit (Mercurio 2016).

## **Screening out rather than screening in**

A hypothesis was that SMEs are using both screen out and screen in phases in their employee selection processes. Surprisingly, five out of eight interviewees reported that their process consists only of screening out applicants that do not fulfill specific predetermined sufficiency conditions or cutoff scores. In other words, applicants that do not fulfil the skill or knowledge levels are rejected. The literature mentions both screen in and screen out phases (Landy & Conte 2013, p.125; Metchik 1999; Farr & Tippins 2017; Mueller-Hanson et al. 2003), but the previous research does not reveal which one of the approaches is more valid. However, according to interviewee 8, psychology is much more valid in screening out rather than screening in, and this is why the interviewee argues that the selection process should only screen out applicants. Interviewee 8 noted that it is easier to measure if an applicant does not fulfil a predetermined sufficiency condition than to try to decide which one of the applicants that passed the condition is objectively the best in the specific selection criterion that is being assessed.

One could argue that screening in as an approach is conflicting against the idea that SMEs should start the employee selection process with a thorough job analysis. Both empirical findings and the literature suggest that job analysis should be the first step of the selection process (Landy & Conte 2013, p.176). The aim of the analysis is to find out what kind of knowledge, skills and abilities are needed in the job, and how they are assessed in the selection process (Landy & Conte 2013, p.176; Berry 2003, p.169). Screening in indicates that the assessor is finding reasons to include applicants on a shortlist by seeking information about positive attributes of an applicant that might predict outstanding future job performance (Landy & Conte 2013, p.125). However, if the job analysis is conducted properly, the SME should know exactly what is needed in the job, thus specific cutoffs or sufficiency conditions can be used: if an applicant fulfils all the conditions, there is no need to search for additional reasons to include applicants on a shortlist.

Also, when screening out, applicants are not compared with each other, but the applicants' assessment scores are compared to the cutoff scores. Five interviewees reported that they do not compare applicants with each other. However, when comparing applicants with each other, the assessor is by default using a screen in approach: the assessor is trying to find the best applicant or best positive attributes by comparing the applicants, which means that the applicants are not compared to predetermined cutoff scores.

The difference between screen in and screen out approaches and their validities are something that would require further research. However, the empirical evidence did not give any reason why screen in approach would be needed. Due to this, the empirical findings suggest that it is safer for SMEs to only screen out applicants based on concrete cutoff scores or sufficiency conditions that are determined during the job analysis phase.

## **Structured online application forms rather than CVs**

Six out of eight interviewees reported that going through CVs is the first step of their process. Furthermore, the interviewees stated that it is a valid and easy method. However, interviewees

7 and 8 strongly argued that unstructured CVs or resumes made by the applicant should never be used. Instead, structured online application forms should be used because they ensure comparability and objectivity. Interviewee 7 stated that it is a basic thing that CVs should not be used, and that the structured form should ask only questions that are related to the actual job.

The literature supports the view of interviewee 7 and 8: reviewing resumes or CVs has not been shown to be a valid method. For example, two studies reported that recruiters did not make consistent judgments when assessing resumes, indicating that the recruiters evaluated different resumes in different ways (Fritzsche & Brannick 2002; Keith 2008). Fritzsche and Brannick (2002) comment that “*interviews appear to be granted as much by luck and whim as by merit.*” Another alarming factor is that for example physical attractiveness and sex affect the assessment of resumes and CVs (Dipboye et al. 1975; Bright & Hutton 2000).

Related to this, also the objectivity of the assessment and the effects of halo error and other rating errors need to be taken into consideration. A way to minimize the rating errors is to create clear anchors for the rating scales (Cascio & Aguinis 2005, p.96; Landy & Conte 2013, p.223). Interestingly, these anchors and rating scales are almost identical to one of the requirements of structured interviews: interviewers should use a scoring protocol and numerical rating scales (Geisinger et al. 2013, chap.27). Self-created CVs and resumes do not have a standard structure, and it is difficult to create rating scales since the assessor does not know in beforehand what information the CV is going to contain. Thus, self-created CVs and resumes can arguably be compared to unstructured interviews, which have been clearly shown to have low validities. Regardless of the assessment method, the previous research indicates that objectivity and structure add validity.

The literature indicates that application forms utilizing biodata have been shown to be a valid method in employee selection (Society of Industrial and Organizational Psychology 2016; Landy & Conte 2013, p.144). Structured forms have also by default structure, and they are more objective. For example, when using an online application form, the SME can develop the form in a way that it is not possible to attach a picture, and the applicants can even be anonymous for the assessor in order to avoid rating errors.

Taking into account the findings from the literature, and the arguments of interviewee 7 and 8, it is advisable that SMEs use structured online application forms rather than self-created CVs or resumes. However, interviewees 2 and 5 raised up an important topic: if there is a severe competition of top talents in the job market, for example in the case of recruiting software developers, then it might be wise to use CVs. The reasoning behind is that if the applicant has many equally interesting opportunities, he or she will choose the one that requires least work to apply. The same CV can be sent countless times, but each employer will have a new application form.

## Structured interviews

Three out of eight interviewees supported highly structured interviews. At the same time, only one interviewee used unstructured interviews, while others used mostly a semi-structured method. The literature clearly states that structured interviews are one of the best ways to assess applicants: McDaniel's et al. (1994) vast meta-analysis concluded that structured interviews have a predictive validity of 0,44, which is only surpassed by cognitive ability tests.

There was also a well-grounded viewpoint regarding the use of semi-structured interviews. Interviewee 5 argued that he uses semi-structured interviews since it gives the interviewer the possibility to ask probing questions, which means that the interviewer can get more information from the applicant. This sounds like a logical explanation, and no doubt the interviewer can get more information from individual interviewees. However, it seems that at least in the bigger picture more information does not necessarily mean that the interview would be more valid, nor that the interview would be better at predicting future job performance (Einhorn & Hogarth 1978). The literature is so unanimous about the superiority of structured interviews that it is difficult to diverge from the research findings. It is possible that with more information about one candidate the interviewer is biased, and he or she is not assessing all the applicants with same criteria anymore.

Another argument that speaks on behalf of highly structured interviews is interviewee 8's statement that in unstructured interviews about 85 percent of the outcome of the interview results due to the interviewees own personality. Interviewee 8 argued that the interview process has to be developed so that it does not matter at all who is interviewing, and this is only possible if the interview is highly structured.

When combining the statements and findings above, it is clear that SMEs should only use highly structured interviews. The research suggests that structured interviews should in minimum consist of the following elements:

- All applicants answer to same questions
- Questions are job related and preferably based on a job analysis
- Interviewers use a scoring protocol and numerical rating scales

(Geisinger et al. 2013, chap.27)

This raises a question regarding the lack of resources in SMEs. Developing a structured interview process with scoring protocols and numerical rating scales is very time-consuming, especially if the SME needs to develop multiple different interview processes for different jobs. This concern was discussed with interviewee 4, who supported structured interviews. Interviewee 4 stated that developing the process takes a lot of time. However, according to the interviewee, investing one or two weeks of time for the development process is a low price compared to unsuccessful recruitments, especially in Finland where laying off employees is very difficult.



## **Structured reference checks**

Three out of eight interviewees used reference checks in their employee selection process. Reference checks are a crucial part of the selection process according to interviewees 6 and 8. The interviewees stated that past behavior predicts future behavior, and the applicant will act in the same way on the new job than on the previous one. Also the literature, for example Ouellette and Wood (1998), support the view that past behavior predicts future behavior. Interviewee 6 stated that if the recruitment is very important, then it pays off to even meet the former employers face to face, since the employers might not reveal all information on a phone call.

The literature suggests that reference checks have some advantages for SMEs. For example, checks conducted with telephone are usually fast and easy (Cook 2009, p.94), which is a clear advantage for SMEs that are struggling with resource scarcity. The literature indicates that structure could add value also in reference check, just like structured interviews and structured application forms were found to be superior compared to similar unstructured methods. Taylor et al. (2004) studied structured telephone reference checks and found a 0,36 correlation with future job performance. Hunter and Hunter (1984) reported reference checks having a mean validity of 0,23 when predicting the performance in training.

However, not all studies agree of the usefulness of reference checks. For example Cook (2009, p.94) report that the leniency error has caused many researchers to dismiss the validity of reference checks. Reilly and Chao (1982) state that reference checks suffer from low validity and reliability, leniency error and by previous employers' poor response rate. Reilly and Chao (1982) argue that if reference checks are used, they should be used in a limited way for a small number of people in order to eliminate those who are not suitable for the job.

Reilly's and Chao's (1982) statement is well in line with the findings from the interviewees. Interviewees 3, 6 and 8 used reference checks after interviews, meaning that only the employers of the final few applicants are called. Reference checks are usually interviews, so according to the findings related to interviews, also reference checks should be structured. All in all, taking into consideration the fact that past behavior has been shown to predict future behavior, and that structured reference checks are relatively fast and easy, the method could add value to SME's employee selection process when used with a screen out approach for the last few applicants. However, it is important to note that structured reference checks cannot replace structured online application forms, structured interviews or cognitive ability tests<sup>18</sup>, and if reference checks are used, they should be used as an additional method after the interviews in the way that Reilly and Chao (1982) suggested.

## **Work sample tests, homework, assignments and job knowledge tests**

Interviewees 1, 2, 4, 5 and 6 stated that their employee selection process includes either assignments done at the office or homework, which were both job related. However, interview-

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<sup>18</sup> Cognitive ability tests are discussed in section 5.1.4 Pre-employment testing

ees 7 and 8 strongly opposed using homework or assignments in employee selection. The academics argued that there is a major risk that homework and assignments are not measuring right things. Similarly, the evaluation of the homework and assignments is problematic if there is not one clear right answer. Lastly, interviewee 7 argued that the applicant might not have any previous experience or knowledge related to the homework or assignment, and the applicant is rejected even though he or she could outshine in the actual job.

When discussing assignments, the interviewees were describing methods that are referred in the literature either as work sample tests or job knowledge tests. It is important to note here that work sample tests and job knowledge tests might be difficult to determine from each other. In early literature, the terms were sometimes confused. (Hunter & Hunter 1984; Roth et al. 2005) Similarly, it is not totally clear from the interviews if interviewees 5 and 6 actually meant work sample tests or job knowledge tests. However, at least interviewees 1, 2 and 4 were clearly describing work sample tests or simulations. Interviewee 1 told that applicants need to demonstrate the company's own product, interviewee 2 stated that software developer applicants program at the office, and interviewee 4 reported that their work sample test assesses for example analytical skills. These are all in line with the definition of the Society for Industrial and Organizational Psychology (2016). Interviewees 1, 2 and 4 stated that the work sample tests were critical parts of their employee selection processes.

The literature also supports the use of work sample tests. Roth's et al. (2005) relatively new meta-analysis focusing only on work sample tests found a 0,33 predictive validity for job performance. This is a comparatively good predictive validity, but still inferior to structured interviews (0,44) and cognitive ability tests (0,51) (McDaniel et al. 1994; Schmidt & Hunter 1998). Interestingly, a meta-analysis by Schmidt and Hunter (1998) showed that the combination of work sample tests and cognitive ability tests had a predictive validity of 0,63, which is one of the highest reported predictive validities in employee selection. From SME point of view, problems might arise from the fact that Roth et al. (2005) argue that the work sample tests should be standardized and have a scoring system. This can be time consuming, expensive and require expertise that SMEs might not possess. On the other hand, standardization and a scoring system would most likely make the assessment valid in the way that interviewees 7 and 8 were requiring.

Secondly, if an SME is using work sample tests it is valuable to understand what is actually important in the job. Landy and Conte (2013, p.138) argue that good performance in work sample tests may result from three things: specific knowledge, general knowledge or cognitive ability. If it is important that the applicant does not require long induction periods, in other words, the applicant has to know a specific job in beforehand or be able to learn the job extremely fast, then using work sample tests is justified. It does not matter if the applicant succeeds because of specific knowledge, general knowledge or cognitive ability, since if the applicant passes the test, he or she is qualified. However, if long term development is important, and if the job is complex, consisting of different kind of tasks that cannot all be measured with one work sample test, then using work sample tests might not be advisable. In complex jobs cognitive abilities have been shown to be the best predictor for job performance (Schmidt

& Hunter 2004), and work sample tests do not directly measure these abilities. Viswesvaran and Ones (2002) even argue that alternative predictors like work sample tests can at best serve as supplements, but never as substitutes for GMA.

Altogether, combining Roth's et al. (2005) and other findings from the literature, statements of interviewees 1, 2 and 4, and interviewee 8's comment that there needs to be only one clear and concrete answer, it seems that work sample tests are a valid way of assessing applicants if the SME takes into consideration the above mentioned aspects. Work sample tests are arguably also good in situations where the SME needs someone to quickly take over a position, and there is no time for induction. In addition, work sample tests could possibly be valuable if it is difficult to assess job specific skills and knowledge with other means. From this perspective, if homework is actually a work sample test that is simply done at home, it could be a valid method. However, compared to work sample tests, similar conclusions about the use of homework cannot be drawn, and it is advisable that SMEs at least take into consideration the cautious words of interviewees 7 and 8 if homework is used.

Lastly, the topic of using job knowledge tests in SMEs is discussed. Dye's et al. (1993) meta-analysis about written job knowledge tests presented a corrected mean validity of 0,45 for predicting job performance. The validity is comparable to structured interviews and cognitive ability tests. Dye's et al. (1993) argue that job-specific tests are always better than off-the-shelf tests and that employers can gain a lot by developing job-specific knowledge tests. However, the Society for Industrial and Organizational Psychology (2016) argue that job knowledge tests might be costly and time-consuming to develop. Arguably, job knowledge tests are a valid method for large corporations that have the ability to develop their own job related job knowledge tests, but it is difficult to imagine SMEs having the time, money and expertise to develop standardized job knowledge tests that would also be valid. In addition, the interviewees of this study did not specifically discuss or mention job knowledge tests, so there is no empirical evidence to support their use in SMEs. All in all, since none of the interviewees mentioned job knowledge tests, it seems that job knowledge tests are not an important selection method in SMEs, and that SMEs can develop a valid employee selection process without using job knowledge tests.

## **5.4. Pre-employment testing**

This section will start by discussing the use of pre-employment testing in SMEs. Afterwards, the use of the two most common pre-employment tests, cognitive ability tests and personality tests, are discussed.

### **Pre-employment testing in SMEs**

Pre-employment testing is a topic that divided the interviewees. Interviewees 1, 2 and 4 did not use any pre-employment tests and did not view them as necessary. All other interviewees reported that they use or might use pre-employment tests depending on the job. Also interviewee 4 told that the company's main European office uses pre-employment tests.

Even though there are some concerns that all applicants do not perform well in tests and others might not apply if the process includes tests (Arthur 2005), the previous research strongly advise companies to use pre-employment tests due to their objectivity and validity. For example, Highhouse (2008) argues that probably the greatest failure of industrial and organizational psychology has been the inability to convince employers to use modern decision aids and especially pre-employment tests. From an SME's perspective, standardized and valid off-the-shelf tests could be attractive, since SMEs do not need to use their own resources for developing the tests. As such, it seems that according to the empirical evidence and previous research there are no obstacles for using pre-employment tests in SMEs. On the contrary, the research very clearly suggests that all companies should utilize pre-employment tests. The important question is what is measured with the tests. Thus, cognitive ability tests and personality tests are discussed next.

### **Cognitive ability tests**

One of the main findings of this study is that SMEs should utilize cognitive ability tests in employee selection. The justification for this conclusion is presented next. Like pre-employment tests in general, cognitive ability tests divided the interviewees. Interviewees 5, 6 and 8 used cognitive ability tests. In addition, the main European office of interviewee 4's company uses cognitive ability tests. On the other hand, interviewees 1, 2 and 3 did not use cognitive ability tests since they argued that the tests were not needed. Interviewee 7 strongly opposed using cognitive ability tests. The interviewee argued that the meta-analyses have been conducted in USA, and that in the big picture the predictive validity of cognitive ability tests in the Nordics might be closer to zero. Interestingly, interviewee 8 strongly commented that interviewee 7's opinion about the validity of the cognitive ability tests is nonsense: the vast meta-analyses are valid and there is clear evidence that cognitive abilities are the best predictors of future job performance also in Europe.

The previous research strongly support interviewee 8's statement. GMA and cognitive ability tests have been shown to be the best predictors for future job performance (Schmidt & Hunter 1998). In addition, Salgado's and Andersson's (2003) country specific meta-analyses found that GMA and cognitive ability tests in France, Germany, Belgium, Netherlands, Spain and UK had similar validities for predicting future job performance as the studies in the USA. Furthermore, for SMEs the facts that cognitive ability tests are easy and cheap to administer, the administrators do not typically need to be particularly skilled, and the scores are not influenced by applicant's impression management or fake responses are all great assets (Society of Industrial and Organizational Psychology 2016). In short, cognitive ability tests provide an easy, relatively cheap, valid and objective method for assessing applicants.

It is noteworthy to mention that according to interviewee 8 the current cognitive ability tests are still not perfect. For five years the interviewee would test all applicants with the latest cognitive ability tests but not use the results in decision-making. However, the results would

be compared with actual later job performance, and only after five years would the interviewee start using the results of the tests in decision-making.

From an academic perspective, the above mentioned approach would be the best solution to ensure perfect validity. However, in the SMEs' reality, even if the current cognitive ability tests might not be totally perfect yet, they are very valid compared to the methods that are arguably used in many SMEs nowadays, such as unstructured interviews and assignments and work sample tests that do not have standardized scoring systems. The smaller the company, the less resources the SME can allocate to the development of the employee selection process, which speaks even more on the behalf of the easy off-the-shelf cognitive ability tests.

Lastly, even though SMEs should utilize cognitive ability tests, this does not mean that the tests need to be used in all recruitments. The more complex the job is, the more cognitive ability tests predict performance both according to interviewee 8 and Schmidt and Hunter (2004). However, interviewee 5 wisely stated that all selection criteria, including GMA, should be decided case by case based on the requirements of the job. Arguably for example within jobs that are very repetitive, such as assembly line work, cognitive ability tests might not be needed.

### **Personality tests**

The findings of this study suggest that personality tests are not needed in the SMEs' employee selection processes. Firstly, the empirical evidence indicates this view: only interviewee 3 used personality tests in all recruitments, and interviewees 5, 6 and 7 might use the tests in some recruitments. However, interviewee 8 strongly argued that personality tests should not be used in employee selection.

Secondly, the previous research does not propose a reason why SMEs would specifically need to use personality tests in employee selection. Firstly, the validity of personality tests has been approximately 0,13 in all meta-analyses (Tett & Christiansen 2007; Barrick & Mount 1991). This validity is low compared to cognitive ability tests (0,51), structured interviews (0,44) and work sample tests (0,33) (Schmidt & Hunter 1998; McDaniel et al. 1994; Roth et al. 2005). In addition, some researchers question if personality tests are useful at all in employee selection context (Morgeson et al. 2007). In the end, his study cannot conclude if personality tests are valid per se. Nonetheless, it can be concluded that personality tests are not necessarily needed in SMEs due to their low validity, and since there is quite strong objection against personality tests, it is safer not to use them.

## **5.5. Assessment and decision-making**

This section will discuss how the decision-making should be managed in SMEs' employee selection processes. First, the topic of objective assessment is reviewed. Afterwards, the conclusion that SMEs should not use averages, weighted scores or combined scores is presented.

On the contrary, SMEs should use cutoff scores, red flags or sufficiency conditions. In the end, people make the decisions, and this topic is discussed lastly.

### **Objectivity to ensure validity**

The findings are unanimous that objective assessment and decision-making are the keys to a valid employee selection process. None of the interviewees directly opposed objectivity. On the contrary, even though interviewees 1-3 and 6 reported that their decision-making is subjective, they aimed for at least some degree of objectivity. Interviewees 4 and 8 recommended highly objective assessment and decision-making. Interviewees 1, 5 and 6 also mentioned that assessing same criteria with different methods is a way of trying to ensure the validity of the process. Assessing same criteria with different methods, in other words triangulation, is arguably wise, since it is often used as a method for ensuring validity in research (e.g. Shenton 2004). Interviewee 5 commented that if one method fails and gives results, which are not supported by other methods, no assumptions can be made from the results of the unreliable method.

Previous research strongly supports objectivity. Highhouse (2008) even argues that according to the data, both the intuitive expertise and the belief that prediction of human behavior is enhanced through experience are myths. From the assessor's perspective, these two arguments should really be taken into consideration. First of all, Highhouse's (2008) argument means that the assessor should never use intuitive feelings or decisions based on gut feeling. Also interviewee 8 supported this claim. Secondly, more experience does not mean better predictions of human behavior. This has been shown with judges, business planners, clinicians, parole boards, marketers, social workers and admission committees (Grove et al. 2000; Sherden 1998; Camerer & Johnson 1997; Dawes et al. 1989). Even clinical judgments of experienced psychologist improve only a little compared to psychology graduate students (Garb 1998).

Also the findings of rating errors like halo error support objectivity. If the assessment is objective, and tied to clear anchors and rating scales, there is a smaller risk for rating errors. Similarly, it has clearly been shown that structured interviews with scoring protocols and numerical rating scales are superior compared to unstructured ones when predicting future job performance (Geisinger et al. 2013, chap.27).

A good rule of thumb for the assessors in the SMEs is that **the selection process has to be developed in a way that regardless of who is assessing and making the decision, the same applicant is chosen**. Only then is the process objective, and only then is the actual best performer chosen. Remember, interviewee 8 stated that 85 percent of the outcome of an unstructured interview is due to the interviewer's own personality, and the only way to avoid this is to use structured interviews and eliminate all gut feelings. Place another person as an interviewer in an unstructured interview, and most likely the same applicant is not chosen by the second interviewer. From this perspective, the assessor in the SME, who conducts only a few recruitments a year because his or her primary job is something else than hiring people, should definitely not trust in his or her own intuition and gut feeling.

In the end, there is a place for subjectivity as well in the selection process of SMEs. Interviewee 4 commented that in a large organization it does not matter if all people do not get along, since they do not need to work together. However, SMEs are so small that most likely people end up working or communicating with everyone. This is something that interviewees 1, 2 and 4 all highlighted. Interviewee 5 brilliantly stated that “*subjectivity is a necessary condition, but not a sufficient condition.*” The supervisor and the team needs to get along with the applicant, but it is not enough. To ensure the “*necessary condition of subjectivity*”, without harming the validity of the objective assessment, two alternative approaches are proposed for SMEs:

- 1) The beginning of the selection process is objective, meaning that no matter who is assessing, the same person or persons are selected. After this objective phase, the assessors make a subjective decision: do we want to work with this applicant?
- 2) The selection process starts with a subjective decision: do the assessors want to work with this applicant? After this, the objective assessment phase starts. However, the assessors who made the subjective decision cannot participate in any way to the objective part in order to ensure maximum objectivity.

Lastly, even within this subjective phase, the decision should not be rushed: first impression and intuition might lead to a wrong decision. Here it is advisable to listen to interviewee 4’s wise words: assessors need to think why do they not want to work with the applicant, try to find the root cause and in the end, a clear reasoning has to be given. Also, have the other assessors noticed the same problem? Is the problem something that can fade away if the assessor knew the applicant better? Can the applicant learn and improve?

### **No averages, weighted scores or combining scores**

According to the previous research, mechanical-prediction techniques, such as regression analysis, outperform clinical decision-making (Grove et al. 2000). However, none of the interviewees suggested that SMEs should use mechanical decision-making. This sounds logical: to be able to utilize for example regression analysis, SMEs would need to have lot of data available, and most of the SMEs do not have the capacity to conduct regression analyses. Also, the SMEs do not hire enough people for the same occupation to be able to collect data.

Interviewees 5, 7 and 8 objected weighted scores, calculating averages of the applicant’s scores, and even any combining of scores. Interviewee 5 reported that the weighted scores would simply create an illusion of accuracy since the assessment is not accurate enough. As a simple solution, interviewee 8 suggested that SMEs should use sufficiency conditions or cut-off scores as screen out steps with each selection method. This is also how the selection processes of interviewees 1-4 were working: if the applicant passes a step, he or she moves to the next one, and if the applicant passes all steps, he or she is offered a job. With this approach, the SMEs do not need to combine the scores of different selection methods. Furthermore, this

approach can also be developed in an objective way by using clear scoring protocols within each step.

In conclusion, this study cannot reveal what is the most valid decision-making approach for SMEs. However, the empirical research indicates that clinical decision-making and any kind of combining, weighting or averaging of scores should be avoided. On the contrary, the empirical evidence suggest that SMEs should use a screen out approach with sufficiency conditions or cutoff scores throughout the whole process. Applicants who pass all steps are equally capable for the job within the limits of the accuracy of the selection process.

### **People decide**

All interviewees stated that people make the final hiring decision. It seems that in SMEs the person who has the greatest responsibility, in other words CEO, partner or owner, is usually participating in the final decision-making. Six out of 8 interviewees reported this. Four interviewees reported that the team, coworkers and supervisors participate in the process. However, the empirical evidence did not explicitly underline if the CEO, supervisor, the team or all of them should participate in the final decision-making.

There was not enough previous research to either justify or oppose the empirical findings, so watertight conclusions cannot be drawn. However, it sounds logical that the CEO, supervisor and future coworkers all participate in the decision-making: in the end, like interviewee 4 stated, in SMEs everyone needs to communicate with each other, and whether the current team gets along with the applicant is a necessary condition, but not a sufficient condition. On the other hand, in larger SMEs and teams it might be difficult to involve the whole team in the decision-making. Interestingly, like discussed in the objectivity section, it should not matter who is assessing or making the decision: if the process is objective, the same applicant is chosen. Based on this, if the process is objective, it should not make a great difference who participates in the decision-making. However, in reality the fact that for example team members at least have a chance to influence in the decision-making might be very important.

## **5.6. Practical implications**

This section and its practical implications are meant for people who are responsible for employee selection in SMEs. Whether the person is an entrepreneur, CEO, supervisor, HR manager or someone else, the presented advices and the framework lead the SME towards a more objective and valid employee selection process. The employee selection framework can be viewed in Appendix 1. The assessor should start with the following three questions in table 5.1, which guide the development of the employee selection process. Afterwards, the 15 points that are presented later should be taken into consideration.



*Table 5.1: Questions that guide the development of the employee selection process.*

Question	Answer & advice
<b>Q1:</b> Is the job A) a high-complexity job or difficult to define, B) a low-complexity job?	<b>Q1A:</b> Assess GMA and use cognitive ability tests. <b>Q1B:</b> Possibly no need for assessing GMA.
<b>Q2:</b> What is more important: A) outstanding performance after a longer period of time, or B) great performance from day one?	<b>Q2A:</b> Emphasize GMA and cognitive ability tests. <b>Q2B:</b> Emphasize work sample tests.
<b>Q3:</b> Is there a fierce competition of best talents in the job market? A good example of this kind of situation is the competition of software developers in 2017 when this study was written.	<b>Q3A:</b> No fierce competition. Use a structured online application form. <b>Q3B:</b> Yes, there is a fierce competition. Use CVs and take into consideration the applicant's perspective.

In high-complexity jobs and in jobs that are difficult to define, SMEs should use GMA as a selection criterion, and cognitive ability test as a selection method. If the job is simple, GMA might not be needed. However, assessors should keep in mind that GMA has been shown to be the best predictor of future job performance (Schmidt & Hunter 1998), and the decision not to use it as a selection criterion should be well considered.

Secondly, if performance in a longer perspective is more important than the applicant's performance when he or she starts the job, then emphasizing GMA and cognitive ability tests over work sample tests is justified. However, if the SME needs a new employee who performs greatly from day one, then it is better to emphasize work sample tests. SMEs can use both cognitive ability tests and work sample tests in the selection process, and the combination of these methods have been shown to predict future job performance very well (Schmidt & Hunter 1998).

Thirdly, if there is a fierce competition of best talents in the job market, then it is advisable that the selection process is easy for the applicant and the SME uses CVs for the initial screening. In addition, the SME needs to take the applicant's perspective into consideration when developing the selection process, so that the SME does not lose applicant's due to an unpleasant process. However, in most of the situations the job market is not heated and using structured online application forms is highly preferable due to better objectivity and validity. If the SME uses CVs, a clear scoring protocol should be used for the assessment of the CVs, just like in interviews, work sample tests and all other selection methods.

Lastly, regardless of the answers to questions 1, 2 and 3 in table 5.1, the following 15 points should be taken into consideration in all recruitments in SMEs. In addition, a probation period should always be used.

## **Defining requirements**

1. SMEs should have an in-house employee selection process. In some cases, combining headhunting and the own process might be beneficial.
2. Invest time and resources in job analysis: it is probably the most important phase (see section 5.2).
3. Developing a selection plan matrix is beneficial (see Appendix 2).
4. Assess only selection criteria that are concrete and unambiguously measurable. Leave out all criteria that cannot be assessed concretely.
5. GMA and previous work experience are often important criteria. However, the priority of these two criteria should be considered according to the framework in Appendix 1.
6. Do not use grade point average or personality as selection criteria.

## **Selection methods**

7. Use always structured interviews that fulfill the following points:
  - All applicants answer to same questions.
  - Questions are job related and based on the job analysis.
  - Interviewers use a scoring protocol and numerical rating scales.
8. Use structured reference checks for the few final applicants.
9. Cognitive ability tests, work sample tests, structured online application forms and CVs should be used according to the framework in Appendix 1.
10. Personality tests should not be used in SMEs.

## **Assessment and decision-making**

11. Aim for objectivity when assessing the KSAOs: the same applicant should pass the selection methods, in other words the assessment of skills, knowledge and abilities, no matter who is involved in the assessment.
12. Use triangulation: try to assess each criterion with more than one method to ensure validity.
13. Subjectivity is a necessary, but not a sufficient condition. A clear reasoning for the subjective feeling has to be given. If the process starts with a subjective assessment, then the people who are involved in the subjective decision cannot later participate in the objective assessment due to possible rater errors. Reflective questions that can be used:
  - Do I want to work with the applicant? Why? Why not?
    - What is the root cause?
  - Have the other assessors noticed the same problem?
  - Is the problem something that can fade away if the assessor knew the applicant better?
  - Can the applicant learn and improve?
14. Screen out applicants by comparing applicants to cutoff scores or sufficiency conditions within each selection method. Do not compare applicants with each other.
15. No combining of scores, averages or weighted scores.

## 5.7. Validity and reliability of the thesis

There are many methods and approaches for assessing validity and reliability in qualitative research. This section starts by reviewing validity and reliability in qualitative research, followed by a discussion of validity and reliability of this study.

### Validity and reliability in qualitative research

There has been significant debate within the research community whether the same quality criteria should be used for assessing both quantitative and qualitative methods (Mays & Pope 2000). For example Golafshani (2003) state that many researchers adopt or generate other terms such as trustworthiness, quality and rigor in order to develop their own concepts of validity in qualitative research. At least after the change of the millennium, terms validity and reliability in qualitative research were not often used in North America, but the terms were still in use in Europe and Great Britain (Morse et al. 2002).

Golafshani (2003) propose that validity and reliability in qualitative research are conceptualized as trustworthiness, rigor and quality. Next, these three terms are discussed. A widely used definition for trustworthiness was introduced by Guba (1981), who reasoned that it consists of credibility, transferability, dependability and confirmability. According to Lincoln and Guba (1985), trustworthiness in qualitative research is contingent on issues that are referred as validity and reliability within quantitative studies. A comprehensive description of Guba's (1981) trustworthiness can be seen in table 5.2. Interestingly, Morse et al. (2002) write that Guba (1981) actually used the term trustworthiness to explain rigor, even though Golafshani (2003) lists them as two different terms. Also Lincoln and Guba (1986) explain that rigor in the naturalistic sense may be seen as a parallel term to trustworthiness. Nevertheless, Davies and Dodd (2002) developed a cluster of terms to describe rigor:

*Attentiveness, empathy, carefulness, sensitivity, respect, reflection, conscientiousness, engagement, awareness, and openness.*

Lincoln (1995) suggests that the emerging criteria for quality in qualitative research are standards for judging quality, positionality, community as arbiter of quality, voice, critical subjectivity, reciprocity, sacredness, and sharing the perquisites of privilege. Lastly, for example Mays and Pope (2000) propose a pattern of questions to assess quality in qualitative research. These questions concern the following topics:

*Worth or relevance, clarity of research question, appropriateness of the design to the question, context, sampling, data collection and analysis, and reflexivity of the account.*

When comparing the definitions, it seems that some of the definitions and terminologies are overlapping. Golafshani's (2003) claim that many researchers adopt or generate other terms in order to develop their own concepts of validity in qualitative research appears to be well justified. From this background, Guba's (1981) framework for trustworthiness is chosen, since it

is contingent on issues that are referred as validity and reliability within quantitative studies (Lincoln & Guba 1985).

*Table 5.2: Guba's (1981) criteria for trustworthiness explained, adapted from Shenton (2004)*

<b>Criterion</b>	<b>Explanation</b>	<b>Provisions that may be made</b>
<b>Credibility</b> (Corresponding to internal validity)	Does the study measure what is actually intended.	A. Adoption of appropriate research methods B. Development of early familiarity with culture of participating organizations C. Random sampling of individuals serving as informants D. Triangulation via use of different methods and types of informants E. Tactics to ensure honesty in informants F. Debriefing sessions between researcher and superiors G. Examination of previous research to frame findings
<b>Transferability</b> (Corresponding to external validity or generalizability)	The extent to which the findings of the study can be applied to other situations.	H. Provision of background data to establish context of study and detailed description of phenomenon in question to allow comparisons to be made
<b>Dependability</b> (Corresponding to reliability)	Similar results would emerge if the work were repeated with same methods and participants and in the same context.	I. Employment of "overlapping methods" J. In-depth methodological description
<b>Confirmability</b> (Corresponding to objectivity)	Findings originate and are the results of the ideas and experiences of the informants. The findings should not be the preferences of the researcher.	K. Triangulation to reduce effect of investigator bias L. Admission of researcher's beliefs and assumptions M. Recognition of shortcomings in study's methods and their potential effects

### **Validity and reliability of this study**

Shenton's (2004) summary and strategy in table 5.2 for addressing Guba's (1981) trustworthiness is used in this study. Firstly, this study used theme interviews and a thematic analysis process provided by Braun and Clarke (2006), which are both often used methods in qualitative research. Thus, condition A may be seen to be fulfilled.

Secondly, in order to understand the organizations, a "prolonged engagement" between the researcher and the participants is recommended by many researchers (Shenton 2004). The author had previously visited the SMEs that interviewees 1, 2 and 3 represented, and the culture of these participating organizations was known before the interviews. Similarly, the author had met interviewees 5 and 6 earlier. However, the author had not met interviewees 4, 7 and 8.

Thirdly, even though Shenton (2004) recommends random sampling, this study did not utilize random sampling of informants. On the contrary, purposive sampling was used. The reason for this was that the author wanted to select top-class SMEs, researchers and a global consulting company in order to gather information how the best SMEs and the best professionals have developed their selection processes. If the aim of this study had been to investigate the characteristics of the SMEs' selection processes in general, then a random sample would have been a suitable method for selecting the informants.

This study used triangulation regarding the types of informants. Experts from SMEs, psychologists, headhunters, a university professor, a former adjunct professor, and an HR manager from a global top tier consulting company were interviewed in order to gather insight from different kind of employee selection specialists. The study also aimed for triangulation of different methods by combining interviews and a selection plan matrix (Appendix 2). Unfortunately, in the end, only a few informants filled in the matrix, thus the information gathered with the matrix could not be utilized in this study. The matrix was possibly too time-consuming, and the busy professionals did not have time to fill it in.

The informants were arguably honest during the interviews. According to Shenton (2004), only those who are genuinely willing to participate should be used as informants. All interviewees participated from their free will. In addition, the fact that interviewees 5, 6 and 7, who all work as headhunters or employee selection specialists, gave statements that are against the best interest of their own business speaks on the behalf of honesty.

Point F was also fulfilled. Shenton (2004) advises that discussions with superiors and the project director may widen the researcher's vision. The author met regularly with the advisor of the thesis, who reviewed the current status of the work and gave feedback and comments how the work could be improved. Furthermore, the author frequently discussed with the CEO and with the chairman of the board of an SME that was involved with the study. These discussions gave valuable insight regarding the SME's perspective.

Lastly, Shenton (2004) suggests that researchers should examine previous research to frame findings. Chapter two provides a wide and deep examination of the characteristics of employee selection, and this theoretical framework was used to frame the empirical findings. All in all, even though for example the triangulation of methods failed, most of the points were fulfilled and the findings of this study can be seen to be credible.

When evaluating the transferability of the study, background data and a detailed description of the phenomenon should be provided to allow comparisons to other situations (Shenton 2004). With background data, Shenton (2004) refers for example to number of organizations, data collection methods, length of the data collection sessions and the time period when the data were collected. All this information is provided in details in chapter 3. The detailed description of the phenomenon, the employee selection process, is provided in the beginning of chapter 2. Thus the required data are provided for the comparison to other situations.

Some of the findings of this study are transferrable to other organizations than SMEs. For example, the importance of job analysis, objectivity of the assessment, structured application forms, structured interviews, and GMA and cognitive ability tests are valid methods and approaches in all settings. This means that also micro enterprises and large corporations can utilize these methods. Arguably, large corporations should utilize at least these methods. However, this study cannot conclude if the use of these methods is advisable for micro enterprises employing one or a few employees. The methods, if properly used, are for sure valid also in micro enterprises, but it is questionable if these enterprises have the resources to use the methods, or if it is financially justified.

According to Shenton (2004) at least two factors should be addressed when assessing dependability: “overlapping methods” and an in-depth methodological description. Overlapping methods refer to the use of similar and partly overlapping methods, such as focus groups and individual interviews. This study did not use overlapping methods. However, an in-depth methodological description that provides the means to reproduce the study is provided in chapter three. In addition, Lincoln and Guba (1985) argue that since credibility and dependability are closely linked, proving credibility at least for some extent ensures dependability. All in all, taking into consideration the in-depth methodological description and the argument that the study was found to be credible, the study seems to be dependable.

Finally, confirmability, which refers to objectivity, is discussed by going through points K, L and M from table 5.2. Like mentioned above, triangulation of methods failed since the interviewees did not fill in the matrix (Appendix 2). However, triangulation of types of informants was utilized. Secondly, due to work experience in employee selection and studies of industrial and organizational psychology the author had assumptions that objectivity, structured interviews and GMA are important factors in employee selection. Furthermore, the author had an assumption that personality tests would be a valid and useful method. Due to the fact that the assumption of personality tests was disproved and that objectivity, structured interviews and GMA have such an extensive and unanimous support from the previous research, plausibly the author’s assumptions and beliefs did not have a significant effect on the study.

The study had some shortcomings. First of all, one important selection criterion that was not thoroughly discussed in this study is the motivation of the applicant. This criterion is sometimes mentioned as one of the most important criteria. It has been even argued that motivation is more important than skills, since skills can be learned, but in some cases gaining motivation might be challenging. Secondly, another shortcoming of this study was the exclusion of the recruitment phase. In the end, the recruitment phase is very closely tied to the selection phase. The recruitment phase can have a huge impact on the subsequent selection phase: for example, if the recruitment process itself works as an effective screen, the company may possibly use more time and resources per applicant in the selection process. On the other hand, if the recruitment process does not screen out any applicants, or attracts by accident also a lot of unsuitable applicants, it can lead to an influx of applications, meaning that the company has to adapt the selection process accordingly.

Thirdly, the applicant's perspective could have been studied in more details. Interviewee 5 argued that the applicant's perspective can never be separated from the company's perspective. Due to this, both of the sides should preferably be studied. Lastly, similarly to one of the findings of this study, the author recognizes that assessment conducted by a human is never totally objective. Arguably, the effect of the author's subjectivity was small within this study, and the condition of confirmability is satisfied.

In the end, only a few points in table 5.2 were not totally fulfilled. In conclusion, Guba's (1981) four criteria of trustworthiness, credibility, transferability, dependability and confirmability were met.

## **5.8. Future research**

The findings of this study revealed some interesting topics for future research. Firstly, from the SME's perspective, there is a need for a study that would focus on the job analysis part, and suggest a job analysis approach or framework for SMEs. Related to this, more research would be needed about the importance of selection criteria such as PE fit, values, motivation and ability to learn in SMEs.

Secondly, interviewee 6 presented an interesting idea of combining the SME's own selection process and headhunting. According to interviewee 6 this would probably be the best approach. It would be interesting to conduct a research studying this combination and its benefits and disadvantages. Thirdly, this study concluded that according to the current evidence it is safer for SMEs to use a screen out approach. However, more research would be needed to find out the actual validities of screen out and screen in approaches.

One very important aspect that needs future research is the balance between the applicant's and the company's perspective. Previous research studying the recruitment phase often takes into consideration the applicant's perspective, while employee selection studies mostly focus on the company's perspective and the applicant's future job performance. However, like interviewee 5 stated, the applicant's and the company's perspectives cannot actually be separated. There is a clear need for a study that would find out how SMEs should balance these two perspectives. Related to this, more research would be needed with regard to how SMEs should combine the recruitment phase and the employee selection phase, since these phases are in reality affecting each other.

Lastly, even though there is previous research about different selection methods, such as structured interviews, work sample tests and cognitive ability tests, the studies do not really help an SME to develop or use these methods. In reality, developing an objective work sample test with a scoring protocol and numerical rating scales might be easier said than done without an easy and straightforward framework or guideline. For this reason, future research about how SMEs should develop or use structured online application forms, structured interviews, work sample tests, cognitive ability tests and structured reference checks would without doubt be beneficial for SMEs.

## 6. Conclusions

The objective of this study was to develop an employee selection process framework, which can be seen in Appendix 1. The study applied a qualitative research approach, and data were collected with theme interviews. Experts from three top-class SMEs, an HR manager from a global top tier management consulting company, two psychologists working with employee selection and headhunting, a professors of psychology, and a recruitment and employee selection specialist who has acted as an adjunct professor were interviewed. The data were analyzed with an abductive perspective utilizing a thematic analysis approach.

The main findings of the study suggest that job analysis is highly crucial, and that GMA and previous work experience are often important selection criteria. SMEs should use objective and structured selection methods such as structured online application forms, structured interviews, work sample tests, cognitive ability tests and structured reference checks. Furthermore, the assessment should be objective and utilize a screen out approach. Lastly, subjectivity is a necessary, but not a sufficient condition, and the subjective feeling of whether the assessor wants to work with the applicant or not should not affect the objective assessment of the applicant's skills and abilities.

In the end, combining the framework and the list of the practical implications in section 5.6. is one valid way of developing the employee selection process in SMEs. The presented framework has justification from the previous research and from the empirical findings. However, there are numerous of different situations that SMEs are facing during employee selection. In reality, SMEs will most likely combine their own practices to the suggested framework. Employee selection is not an exact science, and there is not a one single correct process for it. Nevertheless, it would arguably help SMEs if they started utilizing pre-employment testing and other valid methods like structured interviews, just like the presented framework suggests. Like Highhouse (2008), argued: *“Arguably, the greatest failure of I–O psychology has been the inability to convince employers to use the modern decision aids.”* Hopefully this study convinces SMEs to use the modern and valid approaches, thus perhaps partly releases the industrial and organizational psychology from its failure.



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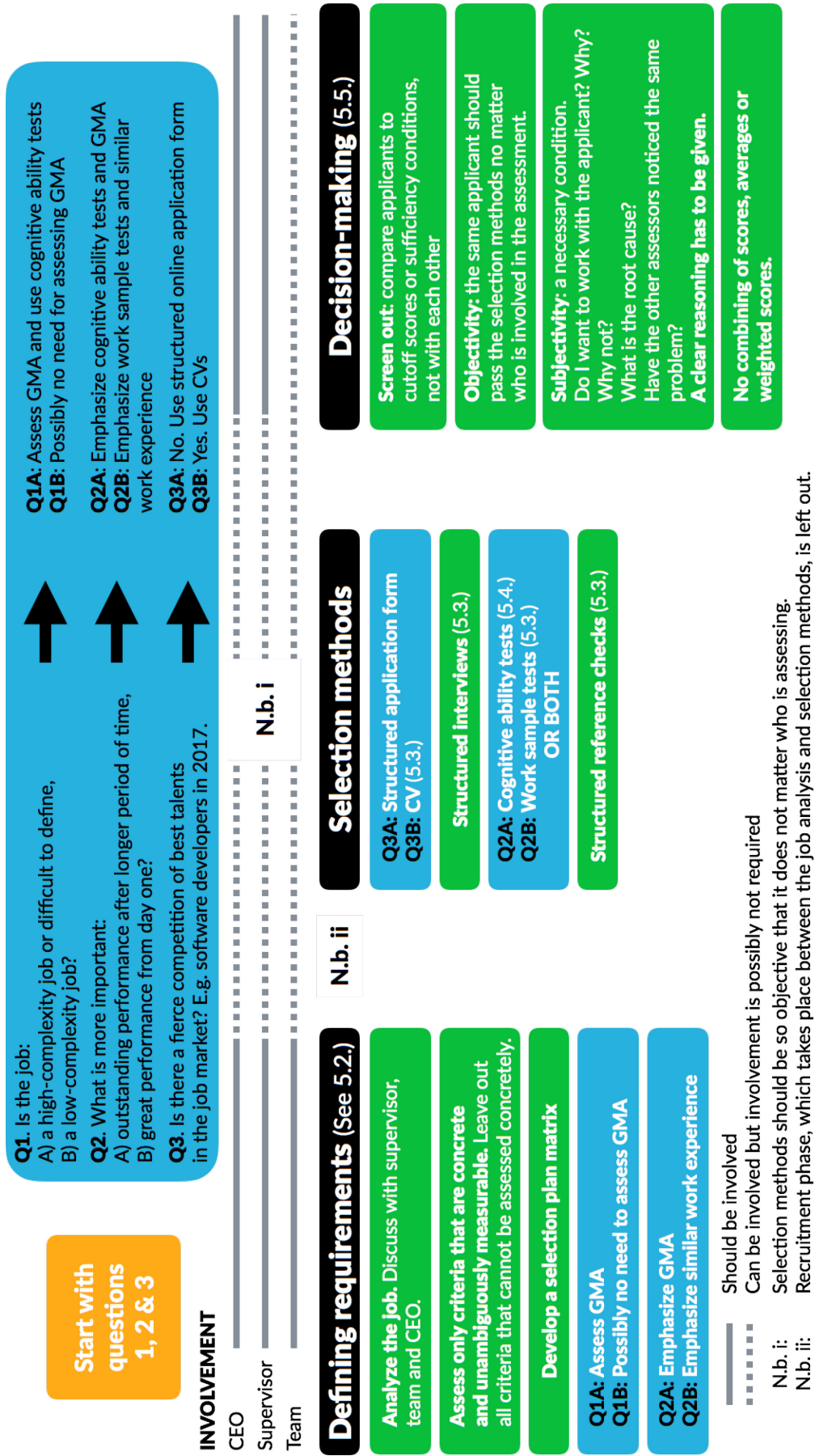
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Appendix 1: Employee selection process framework



## Appendix 2: Selection plan matrix

[illegible]

## **Appendix 3: The theme interview structure**

### **1. General questions (focus on SME)**

1. How have you / would you design an employee selection process for a small and medium-size enterprise?
2. What are the main issues that SMEs are facing during the employee selection process?
3. Do you have the same questions and process for all applicants?
  - a. How do you deal with exceptions? (E.g. late contact or submission)
4. Do you know if the latest research has found out something new about the employee selection methods?

### **2. Selection criteria**

5. How do you decide the selection criteria?
6. How do you evaluate
  - a. the ability to learn?
  - b. the applicant's values?
  - c. person-culture fit?
7. Have you got any best practices for conducting a job analysis?

### **3. Screen out stage**

8. How have / would you design the screen out stage of the employee selection process?
  - a. What methods do you use and why?
  - b. What is your opinion on using CVs to screen out applicants as the first stage of the employee selection process?
  - c. What is your opinion on using biodata (e.g. application forms) to screen out applicants as the first stage of the employee selection process?

### **4. Screen in stage**

9. How have / would you design the screen in stage?
  - a. What methods do you use and why?
  - b. How do you design the interviews? Structured or unstructured?

### **5. Tests in the employee selection process**

10. Do you use pre-employment tests in employee selection?
  - a. What kind of tests?
  - b. Why do you use them?
11. Do you use / would you want to use electronic tests?
12. What kind of tests? E.g.:
  - a. Would / do you test general mental ability or other mental abilities?
    - i. How? With what tests? Pros / cons?
  - b. Would / do you test integrity?
    - i. How? With what tests? Pros / cons?
  - c. Would / do you test personality?
    - i. How? With what tests? Pros / cons?
    - ii.

### **6. Grading, decision-making and validity**

13. How do you evaluate the answers?
  - a. Subjectively or objectively?
14. How do you combine the scores of different selection methods?
15. What kind of grading system do you use?
16. How do you ensure objectivity, validity and credibility throughout the selection process?
17. Best practices in decision-making and grading?